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The Journal of the Fire Protection Profession

JULY 22, 1931

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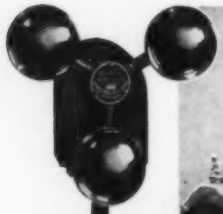

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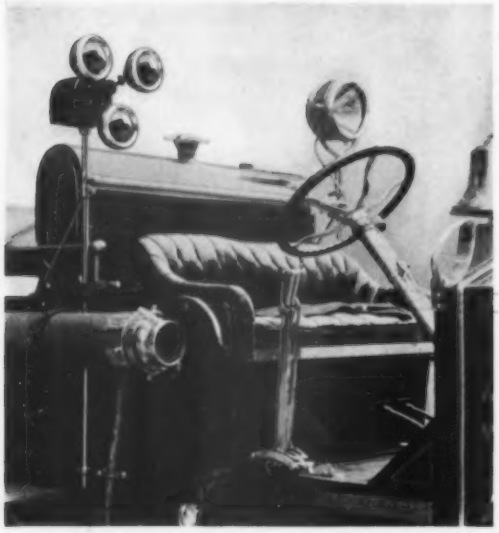

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FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING *and* THE FIRE ENGINEER

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● What this book, now used by fire departments everywhere for instruction purposes, and serving as the basis for practically everything else of its kind, has done toward making the fire service "hydraulics-minded" is now a matter of history.

● We are proud, quite naturally, to have made so useful a contribution to the fire fighting profession.

The Publishers

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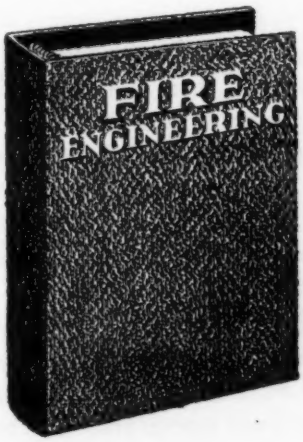

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FIRE ENGINEERING

(A Consolidation of Fire and Water Engineering and The Fire Engineer)

The Journal of the Fire Protection Profession

VOLUME LXXXIV JULY 22, 1931 NUMBER 15

Limitations of Large Fire Streams

Unnecessary Damage from the Indiscriminate Use of Heavy Calibre Streams —Amount of Water Necessary to Extinguish Commercial Building Fires

By FRED SHEPPERD, Editorial Director, Fire Engineering

IN some of our large departments there has been a tendency, in recent years, to use large fire streams on an increasing scale. By large fire streams are meant those which are handled with special appliances such as pipe holders, deluge sets, deck pipes and water tower pipes.

The indiscriminate use of such heavy calibre streams has resulted in unnecessary damage due to excess water. While large streams are more effective in handling large fires than small streams under identical conditions, there is a time when these large streams should not be used, as well as a time when they should. This much may be said, however; improvements in methods of fire fighting will result in decreased loss from fire itself, but the biggest opportunity to reduce damage incidental to fighting fire is in the reduction of water damage. Incidentally, that is what salvage work accomplishes, and the highly beneficial results secured thereby are well known.

"Large Fire Streams accomplish two purposes: they extinguish fire and they cover exposures. In this first operation too much is expected of them, or they are used for operations which could readily be performed by smaller streams."

No large fire occurs at which water is not used in quantities far in excess of the actual amount needed for extinguishing the fire. Of course, it will never be possible to reach the ideal condition—using only sufficient water to extinguish the fire, with no surplus. However, that is the ideal we should endeavor to approach.

Water Necessary to Extinguish Fire in Commercial Building

For the sake of example, I recently calculated the water necessary to extinguish a fire in a commercial building of 30 feet width by 100 feet depth. As a basis of this calculation it was assumed that the combustible load on the fire floor was 50 lbs. per square foot, which is well above the average encountered in commercial buildings. While loads may run up to over 200 pounds per square foot in some establishments, such loads are usually provided largely by heavy machinery, which is incombustible. The assumption of 50 lbs. load per square foot of combustible material is therefore excessive, if anything.

Further, assuming the heat generated upon combustion of this material to be 10,000 B.t.u. per pound, which is approximately two-thirds that of coal, we arrive at a figure which is probably far above the actual heat value of contents found in the average commercial building. Assume further that the heat produced by combustion of one-fourth of the material on the floor is present on the floor where the fire is burning, and that the balances ranges in temperature from 70 to 2,000 degrees Fahr. We thus reach a basis of making calculations for the necessary water to extinguish the fire, by cooling the materials to a point below their reignition point.

Making no allowance for heat carried away by gases which have escaped from the burning floor nor for heat absorbed by steam (vaporized water), we find that it would require a 1¾-inch nozzle 18 minutes to bring the temperature of the fire on the floor to a point well below reignition point.

But taking into the account the heat which has escaped from the building, and the progressive nature of the fire (heat not being liberated instantly nor remaining there until the fire is extinguished) it would require not more than 9 minutes for a single stream to completely extinguish the blaze.

This is a very conservative estimate and it is probable that it would require, in the average floor of the size indicated, far less than 9 minutes to extinguish the fire if the water were used with maximum effectiveness.

Thorough Ventilation Important

Thorough ventilation helps the Fire Department considerably by carrying away the heat as generated. While a supply of fresh air will expedite combustion, at the same time it tends to create a condition which enables the department to operate quickly and effectively. For example, there is a great deal of material on the floor which is not actually afire, but from which inflammable gases will be released by heat. If the floor is charged with gas and air at high temperature, this distillation takes place, whereas if the floor is ventilated fully, the heat is carried away as generated, and localizes the greater part of the heat to the immediate vicinity of the burning material.

We will refer again in this paper to the foregoing calculations.

Two Purposes Accomplished by Large Fire Streams

Large fire streams accomplish two purposes; they extinguish fire, and they cover exposures. In this first operation too much is expected of them, or they are used for operations which could readily be performed by smaller streams.

For covering exposures, they probably serve a purpose for which they alone are adapted. Their greater ranges, the greater quantity of water delivered, and consequently the great coverage, are in their favor. Furthermore, being controlled by apparatus such as deck guns, such streams can be placed in operation to prevent vertical extension of fire by hoistways located at the fronts of buildings or exterior extension from floors below or by means of openings to other floors on the same level, and in this way perform a real service for the department. In covering exposures at large fires, use of large streams is not only justified but most essential.

Comparative Range of Large and Small Streams

With reference to the comparative range of large and small streams, the following figures, based on the work of John R. Freeman, who may well be called the father of Fire Department hydraulics, are enlightening.

A 1-inch stream at 40 pounds nozzle pressure has a horizontal range of 55 feet, while a 1½-inch stream at the same pressure has a horizontal reach of 66 feet, an increase of 11 feet.

At 60 pounds, the 1-inch stream reaches 67 feet, while the 1½-inch stream reaches 80 feet, an increase of 13 feet; at 80 pounds, the 1-inch nozzle has a range of 76 feet horizontally, while the 1½-inch nozzle has a range of 88 feet, an increase of 12 feet; at 90 nozzle pressure, the 1-inch nozzle has a range horizontally of 80 feet, while the 1½-inch nozzle has a range of 91 feet, an increase of 11 feet.

These figures are for effective streams—that is, where a certain percentage of the water delivered in each case, at the limit of range of effectiveness, passes through a circle of a certain diameter. It will be noted that the large size stream has a moderately greater range, to say nothing of the greater volume of water discharged. Thus for covering exposures the large streams are particularly effective, while for operating on fires, they serve better than small streams for outside operations. But for inside work the small streams are more suitable because of their mobility, and the less need for greater range therein.

Discharges from Different Size Nozzles

With reference to the discharges from different sized nozzles, with like pressures, the discharges vary as the squares of the diameters. For example, with a 1-inch nozzle at 50 pounds pressure the discharge will be 209 gallons per minute, while with a nozzle twice the diameter (2 inches) the discharge will be approximately four times as much, or 841 gallons per minute (table values). But larger streams are usually used at higher pressures, with the result that this proportion does not hold in comparing streams actually in operation at fires. But the greater quantity of water discharged by the large nozzle means, if the streams are not absolutely necessary, equally greater losses from water damage.

In summing up, it may be said that small streams only should be used inside of buildings for operations where all but great areas are involved. Large streams should be used outside in operating at fires involving complete structures or whole floors of such structures as well as in covering exposures.

A Point of Caution

But here is a point of caution. As the figures previously quoted show, a fire involving an average size floor of a commercial building well involved should be extinguished within 9 minutes by a 1½-inch nozzle if the water were used with maximum effectiveness. While such effectiveness is not possible in actual fire fighting operations, we are justified in drawing the conclusion that if the large streams are used and if they do not show marked results within the first few minutes, they should be discontinued or shifted to different points. For if a stream can extinguish a fire, theoretically, on an entire floor in 9 minutes it certainly should be able to dampen down the area within reach at the front or rear of the building in far less time. Hence, the period of operation of water tower streams, deck gun streams, and other large streams should be kept to a minimum and if immediate results are not noted, streams should be shifted or withdrawn. Of course the above does not apply in cases where the streams are used primarily for covering exposures or checking the spread of fire from one portion of a building to another. Nor should they be held to apply where a building is so far involved that there is no chance of extinguishing the fire until the building is completely gutted. In this latter event the streams will be used to put as much water as possible on the fire and thus prevent the temperatures within the fire from rising in order to protect the neighboring structures.

Inside Operations Should Be Employed Where Possible

The trend in recent years in some of our more modern fire departments to employ inside operations almost entirely where conditions are suitable, is doing a tremendous amount of good in keeping down water losses, for on inside operations shut-off nozzles are commonly employed and when the water is not actually needed, the nozzles shut off. Furthermore, the commonly followed rule of keeping the nozzle closed until the material which is actually burning is seen, is an excellent one. The time is fast approaching when Fire Departments will be held to more rigid account for the damage they produce in their fire fighting operations, and any progress made in checking water loss either by the careful employment of streams or by salvage work will place the department on a much higher basis in the eyes of the public as well as those organizations interested in reducing the fire loss of the country.

*(From a paper read before the annual convention of the New England Association of Fire Chiefs at Boston, Mass.)

Chief Randlette Speaks on Volunteers

At the ninth annual convention of the New England Association of Fire Chiefs, held at Boston, Mass. on June 23 to 26 inclusive, Chief J. W. Randlette, of the Richmond, Maine, Fire Department, presented a paper on "A Small Town Fire Department."

Chief Randlette's analysis of small town fire fighting organizations was thorough, and many excellent suggestions were set forth. This paper, to which reference in the report of the New England Convention, appearing in July 8th issue of FIRE ENGINEERING, was omitted, will be printed in full in an early issue of this journal.

Fire House Opened in Tuxedo, Md.—Many fire companies in Prince Georges County participated in the dedication of a new fire house in Tuxedo, Md.

Some Suggestions on the Method of Procedure in Fighting

Fires in Walls, Floors and Partitions

This Type of Fire Mostly Occurs in Old Style Buildings—Avoid Damage By Using Small Streams—Some Odd Types of Fires

By CHIEF ARTHUR J. RAHN, Fire Department, Two Rivers, Wis.

As Chief Rahn aptly remarks in the introduction to his paper, any one who claims that he knows all about fires in walls and partitions is either a fool or a braggart. However, the Chief manages to give some very valuable hints as to methods in fighting this type of fire in what follows:

Chief Arthur J. Rahn *

THE first thing in fighting a fire is to know the construction of the building where the fire is. In my department we have a regular school for the men, in which illustrations are drawn on the blackboard describing the construction and lay-out of every business place and factory in the city. In addition the men are sent to all these places on an inspection trip, so that they may be given practical study as well as theoretical. When a man gathers this knowledge he has done away with a good deal of the fear that assails every true firemen when he has to go into a burning building "blind."

Most of Such Fires in Old Buildings

Most wall, partition and floor fires are found in buildings of the older types of construction. The newer types of buildings, built mostly according to building codes, have "fire-stops" in them which prevent a draft from carrying a fire to the top of the building. In other words, the fire-stop creates a dead air space, that in the greatest majority of cases, causes the fire to burn itself out as soon as the oxygen in this dead air space is used up. You know that there can be no fire without oxygen.

The older types of buildings are generally of the "hollow construction" type. In other words, the spaces in the walls and partitions and floors are hollow and have no stops or obstructions in them to prevent a draft from taking a fire from the basement, through the walls and floors, up into the attic and through the roof. That is why so many factories go up in smoke, despite the fact that they are well sprinklered. The water from your sprinklers can't hit the fire, so the building goes to the ground. Even your fire streams can't reach the main fire. However, there are a few of the "hollow type" factories left in Wisconsin, and unless a department gets on the ground early, they can seldom be saved. Your dwelling houses, with the hollow construction type, are still plentiful and therefore a serious problem.

Use Chemicals or Small Lines on Inside Fires

In fighting fires today the modern firemen is continually trying to keep down fire losses. It has been proved time and again that practically two thirds of our so-called fire losses in the past were caused by using too much water. My men are instructed to use chemicals, booster or small water lines on all inside fires, unless the heat is too great to face. Ninety per cent of your fires must be attacked by "going in after them."

The Old Fashioned Method

I remember an instance when I was a boy, where a fire started in a neighbor's house and got into the walls. I saw the firemen tear siding and sheathing off with their axes and pike poles; saw them turn on a hydrant stream and tear off the lath and plaster on the inside wall with the force of the water; saw them go into the house later and tear up the floor with axes and crow bars to get at the fire that had worked itself in there. I can remember yet the remarks of some of the people that stood around watching the firemen work to the effect "that the firemen certainly knew their business!"

Today I know that the firemen destroyed more property and did more damage than the fire. How much easier it would have been to have opened or even smashed the windows, so the heat and smoke could escape; to have gone into the building and felt of the walls to locate the "hot spots" where fire might be behind, tear off the lath and plaster and stand by with a chemical or small line and hit the fire the moment it was exposed. Why stand on a floor above a fire to tear it up, when you can go below the fire, tear off lath and plaster, hit the exposed fire with a small line, and never even damage the floor, and at the same time get away from a good deal of smoke and heat? How much cheaper it is to replace lath and plaster, than siding, sheathing, floors and *also* the lath and plaster!

I have one particular fire in mind. We were called to a

* Chief Rahn graduated from high school and received one year's normal school education, afterward entering the teaching profession. He resigned, however, in 1917, to enter the Fire Department of Manitowoc, Wis. Following a bad fire in October, 1920, in Two Rivers, Wis., the city decided to adopt a paid Fire Department, and Mr. Rahn was appointed Mechanic in that department. He was appointed head of the department on September 1, 1926, upon the retirement of the former Chief. Chief Rahn has been a member of the Wisconsin Paid Firemen's Association since 1917, and served on its Legislative Committee 1921-1925; was Vice-President, 1926, and was reelected to Legislative Committee, 1927-30. He was elected Secretary of Wisconsin State Fire Chiefs on its organization in 1929, and has served to the present in that capacity.

"A general method to follow in these types of fires can be summarized as follows: Ventilate and get all wall and partition fires from the inside by tearing off the wall; when in the floors, tear off the ceiling beneath to get away from smoke and heat, and hit the exposed fire with chemicals and small lines whenever possible to use them. When the exception arrives, use the brains that have been given you."

blaze in a two story residence and upon arriving found that the fire had started in a wall, gone into the attic and had practically burned off a third of the roof. To make matters worse, we found out on arriving that the woman of the house was just in the act of giving birth to a child. The doctor informed us that it would be dangerous to move the woman at that particular moment. By ventilating the building, tearing off lath and plaster from walls and ceilings, we put out the fire with small lines and never got one drop of water in the room where this woman was confined, although she was on the first floor directly below the main fire.

Some walls and ceilings are lined with "Art Metal" or sheets of tin, ceiling lumber, sheet rock, wall board, etc. By using the point of your fire axes, these materials can usually be easily removed.

"Freak" Constructions a Menace

Bear in mind I am talking generally of buildings of general and common constructions. I have come upon walls and ceilings that have been remodeled from time to time. I recall one particular instance where we had to tear off lath and plaster, sheet metal, lath and plaster and then sheathing, because fire had gotten into the wall from the basement. This particular building had once been a livery barn; remodeled into a residence, then a store and had been brick veneered, then into a residence again. Freak constructions are the cause of many fires "getting away." I remember one fire where there were three false attics due to several remodelings of the building.

The best way to work in most wall and partition fires—or any other fire for that matter—is to start from the bottom and work up, although circumstances may alter cases. It is impossible to describe every particular type of wall construction. I remember one place where the walls were filled with sawdust, and we had to pull all the sawdust out.

Fire Originates in Clogged Laundry Chute

I recall another fire where the house was filled with smoke. We could find no hot spots on the floors or walls. After opening all windows to ventilate the place, we found the smoke was thickest in the bathroom. We started to feel on the walls and floor. In the middle of the floor I found the "hot spot."

In fact it was so hot I burned my hand. In touching this spot I accidently tripped a small trap door and a flash of fire met my eye. Calling for a chemical we tipped back the trap door and hit the fire. On investigation we found that our fire had been in a clothes chute. And what a clothes chute it was. The house had originally been a one story building. In remodeling it, it was found that the old chimney would spoil the bathroom, so they cut it off even with the bathroom floor, lined it with some boards, put a trap on top and a metal box on the bottom. This laundry chute was almost plugged full of clothes, and the last pieces of clothing thrown in, no doubt, were the cause of the fire, at least they bore the brunt of it. With this type of construction, it is any wonder we couldn't locate "hot-spots" on the walls?

Hidden Still Causes Blaze

We had another fire where smoke seemed to be coming from a blaze in the basement, but on investigation we could find no fire there, although there was a good deal of smoke which seemed to be getting denser. The house was built in the shape of an "L." The foundation was constructed of stone to the top of the ground, and on this were two foot studding on top of which rested the first floor joists. No doubt the original owner thought that lumber was cheaper than masonry. This short studding was sided and sheathed on the outside to give the building the appearance of being built close to the ground. It was also sheathed on the inside with pine boards, no doubt to provide an air space and keep the basement warm. We could find no "hot spots," although we could hear the fire crackle on one end of the building.

Naturally we assumed that the fire was in that wall. We were just in the act of chopping the sheathing away, when one of the men grabbed a short piece of rope that hung from the ceiling to jerk it down because it had struck him in the face. What was our surprise when a part of this sheathing fell inward, revealing a room about eight feet wide containing a nice moonshine still. The still was mounted on a gasoline stove, the flame of which had set the wall on fire behind it.

I could go on and tell of several more "freak" constructions that I have encountered. However, a general method to follow in these types of fires can be summarized as follows: Ventilate and get all wall and partition fires from the inside by tearing off the walls; when in the floors, tear off the ceiling beneath to get away from smoke and heat, and hit the exposed fire with chemicals and small lines whenever possible to use them. When the exception arrives, use the brains that have been given you.

(Excerpts from a paper read before the third annual Wisconsin Short Course in Firemanship, at Madison, Wis.)

Kenah Named Chief of Elizabeth, N. J.

Deputy Chief William H. Kenah has been appointed Chief of the Elizabeth, N. J., Fire Department to succeed Chief August Gerstung who will retire on August 1 after having served as Chief for over twenty-nine years.

Chief William H. Kenah

Mr. Kenah was appointed a member of the Fire Department on August 15, 1902 and he was promoted to Captain on May 5, 1903. Advancement to Battalion Chief followed on May 1, 1923 and then promotion to Deputy Chief on March 1, 1926.

Arson Increases

According to Alfred Hogston, State Fire Marshal of Indiana, there is a decided increase in the number of arson cases for the first six months of 1931 over a similar period of 1930. The Arson Division investigated 178 fires of suspicious origin as against 115 fires for the first six months of 1930.

Although the activities of the incendiarist have been greater, there has been a larger number caught and sentenced. Mr. Hogston stated that the criminal has become bolder and is willing to take greater chances.

Chief Bower 50 Years in Service

Chief George M. Bower of Rome, N. Y., has celebrated his fiftieth anniversary in the fire service.

He joined the Fire Department on July 1, 1881 as a torchboy in the Washington Hose Company, and continued as a member of that company until it disbanded sixteen years later. He was then made foreman of call men and served at this post for six years until becoming a paid fireman May 14, 1903. In December Chief Bower took a civil service examination for chief engineer and the following month was appointed. He assumed his new duties on February 1, 1914.

Chief Bower is the sixth man to hold the post of chief in the Rome Fire Department.

Chief Ringer Wants More Men

Chief Charles W. Ringer of Minneapolis, Minn., may ask for 130 additional firemen in his 1932 budget. Chief Ringer pointed out that an increase in personnel is necessary if the Fire Department is to maintain its present fire insurance rating.

Chief Geller, of Norwood, Dead

Joseph A. Geller, for twenty-five years Chief of the Norwood, Ohio, Fire Department, shot himself at Fire Headquarters as the result of brooding over the deaths of his wife and his daughter, who passed on during the last two years.

An officer had heard a shot at 4:30 p.m., but believed the sound was the result of the backfiring of an automobile. The Chief's death was discovered when a visitor called at headquarters and asked to see him. Chief Geller is survived by three children.

Mayor Baker has appointed Captain Doherty Acting Chief of the department.

Thirteen Pass Tests for Denver Chief—Thirteen members of the Denver, Col., Fire Department have passed examinations qualifying them for assistant chiefs.

The Volunteer Fire Department

By N. N. WOLPERT,
Assistant Editor, FIRE ENGINEERING

A Series of Articles on the Best Known Practices and Ideas for the Volunteer Fire Department

This article, the fifth of a series, describes methods and plans for maintaining the interest of members of a volunteer Fire Department. The next chapter will cover personal liability of firemen—some of the things for which the firemen are personally liable according to law and some of the things for which the Courts do not hold the volunteers responsible.

NOW that the Fire Department has been established according to state laws, men have enrolled in the organization, funds have been raised and apparatus purchased, the problem arises of what program to follow to hold the interest of the men in the new Fire Department or club.

Of course men who have not had the thrill of fighting fires or who have not had the opportunity of seeing the new apparatus in actual use, are very anxious to rush to fires. At one department that I visited shortly after apparatus was purchased, I was told of one man who slept in the driver's seat all night so that he would be privileged to take out the apparatus in case an alarm came in. But fire alarms are, or at least they should be, infrequent.

In several communities on Long Island, volunteer firemen craving for something to do, started fires of their own. But this method of maintaining interest in the department is not recommended. It is insane for some members to pay the severe price demanded by the Courts in both time and money, so that the volunteers will have something to do.

There are many ways to hold the interest of men—standard plans, such as talks by prominent men, drills, smokers, round table discussions and dances, and stunt programs, depending upon the ingenuity of the officers in charge.

Some Things Must Be Given Away Free

One idea must be borrowed from the street men or hawkers with whom every village is acquainted. They do not hold the interest of the crowd because of any inherent or potential ability as a speaker, but merely because they always emphasize a promise to give something for nothing—a little trinket, an explanation of how to do a card trick, or merely entertainment.

Let us see how it can be applied to the volunteer Fire Department.

Through the state of Pennsylvania there are a large number of volunteer Fire Departments. In many of these towns, the firemen have what they call "feeds." It is not an elaborate affair—sometimes a bean supper, or a frankfurter roast or something just as simple. The wives of the members provide the refreshments, or if there is a ladies auxiliary, the ladies take complete charge.

Every informal gathering of this nature where a group of men sit down at a table, will always result in a better understanding of what the organization means and its importance to the community. Impromptu talks must naturally follow, and if the presiding officer is on the job, the topic of conversation can be directed to some Fire Department matter or subject of interest to the volunteers. Most of the large business deals are closed not in offices but at a dinner table for executives realize that a man is in a much better frame of mind after he has dined.

If the informal refreshment hours are not held too frequently, whatever small amount is necessary to meet expenses may be taken from the treasury. If the expense is pro-rated among the members present, the charge will be low and not prohibitive.

Plan Outside Drills for Summer Months

In the summer time, it is both pleasant and interesting to hold outside drills. For elementary practice, the spot selected should be in a sparsely populated section. But after the men have mastered some evolution well, it will be better to hold the drill closer to the center of the village. Each firemen has a potential desire to "show off" and it is a trick of the trade to provide him harmless opportunities to occupy the stage for a brief period. Try this stunt during the summer and see if it doesn't bolster up your average attendance at the regular drills or meetings. As a general thing extensive drills with apparatus are held once a month when the weather is favorable although one southern city has drills twice a week.

If nothing extensive is planned for a meeting, it is frequently possible to go through the order of business and then give the men an opportunity to drill.

When interest appears to lag, an excellent tonic is to introduce the thought of competition. Record the time made by the various companies in going through some definite routine or evolution. If the department has but one company, the time can be taken of individual members in coupling hose, connecting a hose to a hydrant, time required to climb an extension ladder, and so forth. When the spirit of competition is brought into the field, what would normally be considered as work, becomes an interesting game. For departments consisting of one company, the membership may be divided into two groups termed the "blue" and "red" or given some other designation.

Members May Discuss Previous Fire

Should a fire occur, then the problem for the next meeting is provided. Have the members discuss the fire and describe how they would have fought it under the circumstances. A large amount of valuable information is brought out, and the member who is new or inexperienced will learn why certain things are done and why some things are prohibited.

Participation in county or association tournaments always revives interest in the fire service. For a young department, it is often wise to forego this pleasure, as tournaments require dress uniforms for the men and perhaps a band of music for the department. The uniforms are generally furnished by the members themselves, but it is often the custom for the village to defray the expense of the band.

A plan tried by a western department and found to be successful is to follow the regular meeting with a radio party or a bean supper. Drills are separate from regular meetings.

The residents of the community or village must be made to realize that the Fire Department is a club.

A good many of the townsmen find comradeship and recretion by belonging to a fraternal organization and attending its meetings. To support the order, members pay dues. Volunteer firemen, in a similar manner, have formed a fraternal organization, the prime object being to prevent fires and to fight fires when they do occur. In order to support their activities, the men pay dues and establish a system of fines that would never be tolerated by some other fraternal group. With the money thus collected the firemen often buy their own apparatus and equipment.

The community must take kindly to the Fire Department and look upon outdoor drills, the sound of billiard balls in the fire house, the merry sound at house parties, as club or recreational activities that serve to hold a group of men together for the protection of property against fire. Were it not for such moments of pleasure, the small town would find it necessary to resort to methods of the early 1700 and make a house to house call for volunteers whenever a fire visited the community.

Suggestions by Chief J. E. Taplin

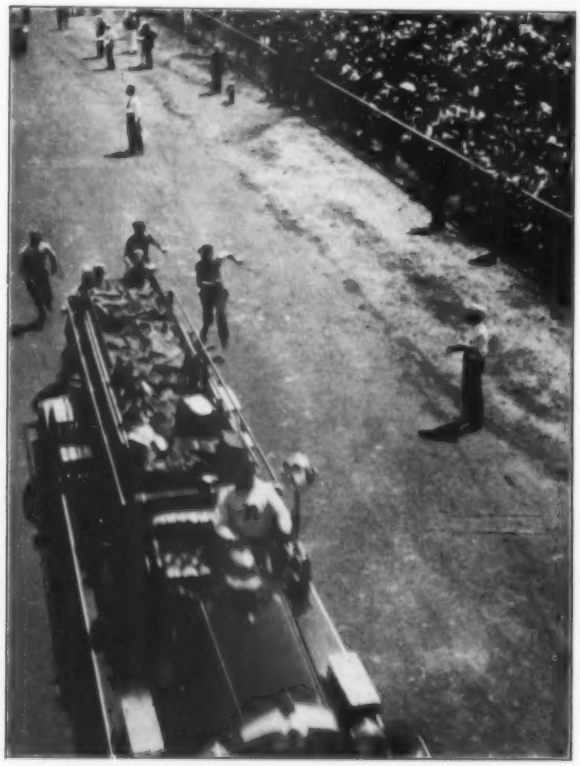
J. E. Taplin, formerly Chief of Blackwell, Okla., and now Director of the Oklahoma Fire Department Training School, is well known for his work with volunteer firemen. He has prepared the following article on maintaining interest in the volunteer Fire Department:

Good morale in any organization is dependent upon some impelling motive behind it. The success of a baseball team is assured only by having competent leaders enjoying the confidence of team mates. A football squad will not do best unless endowed with the spirit of fair play and the desire

to win based upon that spirit. So with Fire Departments, good morale is based upon some factor that inspires its members with spirit, zeal and confidence.

In any group there is always some outstanding person who is the prime mover, and about whom the activities revolve. He has vision and commands the respect and confidence of associates. This is the first requisite of a successful organization. Without some such leader there will be little interest manifest among its members.

A second requirement for an organization is a real purpose or need for its existence. This factor is not lacking, especially in volunteer firemen's organization, for there has never been a worthier purpose than, "The Control and Extinguishment of Fire." In most communities where volunteer Fire Departments exist, there is not enough work to do to maintain the interest necessary for efficiency. No more deterring influence can be imagined, than to go for weeks, or months



Tournaments Help to Revive Interest

The photograph shows volunteer firemen jumping off fast-moving apparatus to pull off several lengths of hose, connect the line to the hydrant shown, attach a nozzle and then to direct the stream at a target. The contest took place at Great Neck, L. I.

without a call to duty. Proficiency for any artisan or mechanic is acquired by constant performance of the requirements of his trade or profession. It is very evident, therefore, that some auxiliary activity is needed that will necessitate fire department members meeting frequently.

The assemblage of its members monthly and preferably bimonthly or weekly, at which a certain amount of fire fighting training may be given, is desirable. That auxiliary activity will serve as a stimulus for the meeting and make possible a portion of regular and systematic fire training.

Activities that will serve such need are varied and legion, and the plan that is followed will depend largely upon the characteristics of the department's individual members. In some communities an athletic program sponsored by the Fire Department, wherein good clean contests between individuals and teams are sponsored have proven highly successful, both from the standpoint of providing a common interest, and for providing finances for its endeavors. Hand ball, volley ball, baseball, bowling, tennis are a few examples of sports that may be promoted.

Other departments, not athletically inclined, might find "Fire Prevention" a topic of timely interest. The writer would like to see some enterprising department organize a luncheon club to be known as "Ignus Inimici," (Latin for "Enemies of Fire"), its membership to comprise one representative from each of the principal business houses of the city. The owner or manager should appoint the member, representing his firm, and designate him a special fire prevention man. Club meetings could be held every two weeks or monthly as would seem best. Varied entertainment should feature the program, reserving a fifteen minute period for discussion of hazards attendant upon various classifications. One meeting devoted to "Fire Hazards in Drug Stores" would be followed by another on "The Dangers of Lumber Yard Fires," etc. In all cases members are to participate in the discussions. Could any one move result in more fire prevention than the training and establishment of a fire prevention man in every place of business?

Auxiliary activities should not interfere with social functions of the Fire Department. Experience will prove in most cases that they promote social gatherings. Smokers and light lunches are always of value. Family nights are a desirable feature of the social life of a Fire Department. The department should be like a large family, and such gatherings at regular periods promote that spirit. The value of the annual ball is so well understood its discussion is not necessary.

So much for the auxiliary and social features. While they are essential stimuli for a healthy organization, care must be exercised that the real duties of the department are not overshadowed. At every meeting some participation in Fire Department work should be required, the major part of which should consist of drills in the use and care of manual equipment. Competition between individuals and companies in the use of such should be encouraged. Space will not permit outlining such stunts. This must be left to the ingenuity of fire department officers. Suffice to say that they should be maintained until every member is thoroughly familiar with the use of every piece of equipment.

A Stunt to Awaken Interest

The writer has found the following stunt to be of value in creating interest, and testing what the fireman knows. It is in the form of a competitive quiz. Divide the membership into two groups, A and B. The individuals of each group submit a question relating to fire service, to be answered by one on the other side. The leader of the questionnaire then shuffles the questions submitted and reads them to members of each group in turn. When a question is correctly answered that group is given credit for a certain number of points. If a member of group A fails to answer the question directed to him he must refer it back to a member of group B. Should he not be able to answer he sends it back to group A for its answer, the group giving the final and correct answer receiving credit therefor.

The above are but a few of the multitude of stunts and of ways and means to create interest in volunteer Fire Departments, and with the proper leadership, and originality in devising others, and the initiative required for putting them over, excellent results can be obtained.

Chiefs' Trip to Honolulu Cancelled

The officers of the Pacific Coast Association of Fire Chiefs voted to postpone the trip to Honolulu, at which city it was planned to hold this year's annual convention, because of the general depression. At the last report over three hundred chiefs and their guests had expressed their intention of joining the Hawaiian trip that was planned.

Supt. W. J. Burke of Boston Honored

More than 250 guests in the electrical industry assembled at the Copley Plaza, Boston, for a testimonial dinner arranged to honor W. J. Burke, Superintendent of the Wire Division, Boston Fire Department, who completed forty years in the service of the city. A committee of thirty persons, headed by Austin E. Greene, of the Allis-Chalmers Manufacturing Company, was in charge of the arrangements.

Mr. Burke was presented with a purse of $1,800 in gold and Mrs. Burke was given a large bouquet of roses.

Aerial Ladder Delivered to Brockton, Mass.—A new aerial ladder has been placed in service in Brockton, Mass.

Barry Orders Fire Alarm Boxes Out—Edwin D. Barry Safety Director, Cleveland, Ohio, has ordered that fire alarm boxes be removed from districts where fire alarms have been reported by telephone over a long period. This move followed a report by Chief James E. Granger that there were 185 false alarms in May.

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

DUE to the large number of new manufacturing processes and to the advance of refrigeration, it is becoming more common for firemen to encounter obnoxious and dangerous gases in the course of their work. To reach the seat of a fire or to carry on quick rescue work, it is necessary that a crew work their way through these fumes to their objective. Ordinarily, to carry out such an order, would result in severe punishment to the respiratory organs and perhaps dangerous after effects would develop.

Gas masks have been designed to permit firemen to work in smoke or gas filled quarters. It must be understood that these masks do not carry a supply of oxygen but merely act as a filter. Where there is a low concentration of oxygen, gas masks are useless, but where the oxygen concentration is well above the danger point, considerable good from the use of the masks have been reported.

In the box on this page is the problem that is considered in this issue. Due to the large number of replies that have been received, the discussion on this problem will be continued in the following issue. Should you have a question that you would like to see discussed in this department, write to the "Round Table Editor," FIRE ENGINEERING, 24 W. 40th Street, New York, N. Y.

HERE IS THE PROBLEM

How many companies in your city are provided with gas masks?

What has been your experience with this type of equipment?

Do you have a crew specially trained for this work or is every fireman instructed in the use of these masks?

Discussion of the Question

The majority of the replies received show a marked preference for the use of gas masks. In some cities specially trained crews of men are used, for not all firemen are fitted to work with gas masks. The replies follow:

Jas. E. Granger, Cleveland, Ohio: We have the following companies in our department provided with gas masks: 16 Hook & Ladder trucks, two masks each; 3 Rescue Squads, six masks each; Assistant Chief, two masks.

This makes a total of fifty-two masks, all the Burrell type.

Our experience with this type of mask has been most satisfactory where men were properly trained and instructed in the care, use, and limitations of the mask. They form an ideal protection to men when obliged to enter atmospheres containing heavy concentrations of ammonia vapor, sulphur, smoke, and reasonable concentrations of poison gases, including carbon monoxide, illuminating, and producer gases. Men wearing the masks should not be subjected to violent exertion for the reason that under such conditions they would experience a resistance in obtaining sufficient oxygen through the canister. It must be remembered that the canister serves as a filter and catalizer, and it is impossible to obtain more oxygen through the chemical contents and filters contained in these canisters than the maximum capacity which would furnish sufficient oxygen for normal respiration.

Special precautions should be taken where a deficiency of oxygen exists and in the event of such deficiency, oxygen contained breathing apparatus should be substituted for the gas mask. Approximately fourteen per cent oxygen content should be the minimum where the gas masks are used, below that point their use is extremely dangerous.

With the proper instruction and training, men can be taught to accurately determine when the mask is depleted through the resistance caused by the clogging of the anhydrous calcium chloride. This resistance is experienced in a sufficiently early stage to permit the wearer of the mask to make his exit without difficulty.

Members of our Rescue Squads are specially trained in the use of the gas mask and oxygen contained breathing apparatus. All other members of the department are instructed in the use of the masks, and when there is occasion to use them, such members as have displayed themselves as most competent, are assigned to work with the masks.

J. Marietich, Capt. Rescue Service, Los Angeles, Cal.: There are eighty-seven Burrell gas masks in the department for the forty companies.

The masks are sometimes worn by the Salvage companies in ventilating before spreading their covers and by other companies confronted by thick smoke while ventilating and locating the seat of the fire. They have also been used successfully in the presence of ammonia leaks and industrial gases.

One member "took a chance" and entered a man-hole to rescue two men who were overcome by sewer gas. A hose mask (which arrived later) was used in getting him out. He was quickly revived.

Hose masks and self-contained oxygen breathing apparatus are used where there are high concentrations of poisonous gases of low concentrations of oxygen.

Every member in the department is instructed in the use of a gas mask. Members of rescue companies are trained to work in smoke and irrespirable gases.

William Conlin, Chief, Hamilton, Ohio.: All companies in this department are equipped with gas masks.

We have used this type of equipment quite extensively, and under all kinds of conditions and I do not see how any modern Fire Department can be successfully operated without gas mask equipment. They not only save your manpower but are also a determining factor in lowering fire losses by allowing the men to fight fire at close quarters.

All members of this department are instructed in the use of the gas masks. We have no specially trained squad for this purpose.

J. H. Espey, Chief, Elmira, N. Y.—There is but one company in the Elmira Fire Department equipped with protective breathing devices—the Rescue Squad. The members of this unit are thoroughly trained in first aid methods, inhalator operation and use of the McCaa 2-hour type breathing apparatus with which they are supplied. Gas masks were in use but were not the style fitted to meet the requirements.

Members of various companies when detailed to school are taught the proper use of every fire fighting and protective appliance in the Department.

I advocate the installation of All-Service gas masks on every piece of apparatus in my Department. The specially trained Rescue Squad has used McCaa apparatus with fine results, particularly in one bad ammonia leak case.

Frank W. Fuller, Chief, Brainerd, Minn.: Each piece of our apparatus is equipped with two Burrell gas and smoke masks. Our experience has been that they are a real asset to our Department. We find that we can extinguish our fires much sooner and with a smaller stream thereby having a smaller water as well as fire loss than before we used them. Our experience has been that it takes a man some little time to become accustomed to their use, but we find that after using them a few times, they reach for a mask as soon as they see smoke in any volume.

We have found that in using them in a basement that it is well to have two openings to the room so we will have a draught to furnish oxygen. This type of mask will filter smoke and gases but does not furnish oxygen. If it is possible to get two openings in a basement we are fairly sure that carbon monoxide will not be present in too great an amount for the mask to handle. I, personally, have had the experience of entering a room where there was not sufficient oxygen, but found that the mask gave enough protection to reach the open air before I collapsed. After collapsing it took the inhalator but a short time to bring me around again.

As is the case in all Fire Department operations we have a few men who are better fitted to use a mask than others, but it is our aim to have all of our men familiar with their use.

Hugh F. Morris, Chief, San Mateo, Cal.: Three companies in our City are equipped with gas masks, one truck and two engine companies.

With the gas mask, firemen are able to enter smoke filled basements and homes and get to the seat of the fire in order that effective work may be done. I find by being able to get to the seat of the fire with the use of gas masks that considerable water and fire damage is eliminated.

Unable to have a specially trained crew for this work, due to the personnel of the department being limited, each fireman is instructed in the use of the masks.

Emil A. Johnson, Chief, Boulder, Col.: All companies are equipped with All-Service smoke masks.

We have used these masks on a number of fires and found them to be satisfactory. In fact if we had not had masks in some of our basement fires, it would have been impossible to get to the seat of the fire.

All members of the department are trained to use masks.

Geo. Van Zant, Chief, New Castle, Ind.: We have but two companies and each is equipped with gas masks. We consider them one of the most essential pieces of fire equipment we have, and frequently have use for them.

Each man is instructed in its uses, and is capable of donning one and going into action.

Robert L. Laing, Chief, Seattle, Wash.: We have a total of sixty-eight gas masks in use in our city. We have had experience with a number of different kinds of smoke helmets and gas masks.

Members of crews wherein gas masks are employed, are all carefully trained in the use of the gas mask and smoke helmets.

W. G. Lutkey, Chief, Oakland, Calif.—All truck companies, of which there are seven, are provided with gas masks. Each Chief's car (six) also is provided with gas masks.

A chemical company is provided with three gas masks and is sent on special calls requiring these masks. This company is especially trained in such work. This equipment has given very satisfactory results.

R. A. Bogan, Chief, Baton Rouge, La.: All of our seven companies have Burrell gas masks; these masks are all tested, and aired every fifteen days, but they have their limitations. It is dangerous to use them where the oxygen is below fifteen per cent concentration. This condition is usually found in cellars, and sewer manholes, and before sending anyone in we always make a test with a safety lamp.

Every man in the department is trained in the use of a gas mask.

J. I. Fetters, Chief, Mishawaka, Ind.: Only three of our six companies are equipped with masks but eventually all of them will be so provided.

We have found the masks of vital importance in locating the base of smoky fires in basements, etc.; also in the rescue of persons overcome.

At present every fireman is instructed in the use of these masks but it is my opinion that a special crew would be better. Not every fireman has the proper mental attitude and the high degree of courage necessary to use masks to the best advantage.

Roger Boyle, Chief, Jersey City, N. J.: All of our gas masks are in our Rescue Squad Company. This type of equipment has been a big help to this company, especially when called out on ammonia leaks, as well as at many other cases requiring the use of these masks.

We have a specially trained crew of firemen on this rescue wagon, who have been instructed at our training school in the use of all the equipment on this truck. All firemen in our department have been instructed in the use of masks.

Wm. E. Seaman, Chief, Hempstead, N. Y.: We have one company in our department provided with gas masks. That company is known as the Rescue Squad, and carries two half-hour McCaa oxygen masks, and eight Burrel Masks.

We find this equipment to be invaluable. Practically all of our men have been instructed in the use of these masks, but we have a specially trained squad for this work.

C. E. Griesser, Chief, Bryan, Tex.: One company is equipped with All Purpose masks, and a second will be equipped this year.

The hardest test that these masks have gone through so far was their use in a picture booth in which fourteen reels of film had burned. The men wearing the masks suffered no discomfort whatsoever.

All the men in this department are trained in the use of these masks.

John J. Cullinan, Chief, Morristown, N. J.: Two companies carry gas masks as follows: Four Burrell All Service Gas Masks are carried on our 75-foot aerial ladder truck; one Draeger mask and two Burrell All Service Gas Masks are carried on one of our 750-gallon pumping engines. All alarms are responded to by one or the other of these companies and in case of a box alarm, both respond.

The experience has been very satisfactory, not only for fire purposes, but also for ammonia leaks.

The paid men form a regular trained crew and in addition a certain number of our volunteer firemen have received instruction and form part of this corps. We think so much of gas masks that we are going to include instruction to all of the 220 firemen of our department.

Bert Sybrant, Chief, Bellingham, Wash.: All companies in our department are equipped with gas masks. We have had very good success with our gas masks. We have the two kinds of masks—air contained and Burrell All Service Masks.

A trained crew takes care of this work, but we also train all firemen in the use of handling the mask and these firemen are trained under actual conditions.

Thomas H. Mahoney, Chief, Westfield, Mass.: We carry two masks on each piece of apparatus. The type of mask we employ does very well in smoke and some gases.

We have no trained crew; all men are instructed in the use of masks.

W. P. Cooper, Chief, Richmond, Calif.: All companies in our department are equipped with Burrell All Service gas

(*Continued on page* 553)

THANK YOU!

Because of the unusually large number of Fire Department officials who contributed to the discussion of this problem, it has been necessary to divide the material into two parts and to continue it in the August 5 issue.

With the Editor

Duty First—Camera Second

The keen and exalted sense of duty of the fireman was well illustreated in a recent happening on Long Island, N. Y. The Fire Department of a town was ready for action in front of a building from which belched the blackest of black smoke. Shining red helmets, rubber coats and boots, and all the panoply of the war against fire was in evidence.

Then a cry from an upper story window and the form of a girl appeared amid the swirling murk. The men quickly spread their net to catch the maiden in distress, when she should leap to safety. As the laddies strained backward to sustain the impact of the body about to come hurtling down, a sudden wailing shriek from the fire station they had just left startled them. The taut net slightly sagged as they hesitated and glanced at each other. Then a louder and more insistive wail from the fire house siren and the net was dropped on the ground, the firemen scampered for their apparatus, while the director lowered the megaphone through which he was about to call "Camera!" As to the maiden in distress above, the distance was too great to hear her remarks and perhaps that was just as well!

The film illustrating the history of the town in which the local department was about to take part was important, but true to their sense of duty, the call to real action was a hundred times more urgent. Everything must wait for that! After the real fire had been extinguished (it wasn't a very big one) the firemen returned to the sham battle, and the film was completed to the satisfaction of all concerned.

Humorous as the elements of this incident may be, it well illustrates the spirit of the American Fire Department—duty first, at all times!

Removal of Fire Alarm Boxes

The telegraph fire alarm is generally looked upon by Chiefs as the main reliance of the Fire Department in keeping in close touch with the fire situation and in prompt response to alarms of fire. It is all the more astonishing, then, to read of the action of a Fire Commissioner of a mid-Western municipality of some size in ordering the removal of such boxes from a certain section of the city.

The reason given for this remarkable move is apparently two-fold. The fire alarms in this particular section have largely, it is said, been reported by telephone, and there have been an excessive number of false alarms.

In the first instance, it would seem, the use of the telephone in place of the boxes by the people of a certain district must largely arise from a lack of proper education of the public. The remedy for this, rather than the removal of the boxes, should be an intensive campaign in this particular section to emphasize the greater accuracy and certainty of the fire alarm box. In such a campaign, emphasis should be laid upon the accuracy of the box and the removal of possibility of human error in sending in an alarm. In practically every instance, the person 'phoning an alarm is suffering under a great mental strain, and, if of an excitable nature, is apt to be incoherent and inaccurate. This means serious delay in checking up the location of the fire. Another very important point in favor of the use of the box is the difficulty of finding an available 'phone in case of a late night alarm. If the fire has attained considerable headway the 'phone in the building involved is out of the question, and, especially in a residential district, all of the inhabitants may have retired. This will mean the necessity to arouse someone in the neighborhood from sleep and a serious delay will be the result. The box, in a well arranged system, is only a short distance away, and its action is instantaneous and precise in summoning the Fire Department.

The second reason for discontinuing the boxes is even more astounding. Imagine removing the fire alarm boxes in cities in order to stop the practice of sending in false alarms! This should be, per contra, a job for the Police Department of the city, and give their detectives something to do in apprehending the offenders and making examples of them, thus bringing the practice to a stop by the imposition of severe penalties.

Playfulness Has Its Hazards

Playfulness and lightheartedness have their place in everyday life, but their place does not, at least in one instance, seem to be in the exhibition of a newly acquired piece of fire apparatus by the local department. In the particular case in question, the fire laddies had just received the new pumper from the manufacturers, and their exuberance knew no bounds. The first thing to be done, of course, was to show the people of the little town what a fine apparatus they now possessed and how efficient it was in throwing a powerful stream of water on a fire. To avoid trouble, the exhibition was widely advertised and the people were warned not to turn out in their best Sunday clothes, as disaster might result.

The apparatus in brave red paint roared down Main Street, with the Chief at the wheel, and the powerful siren giving voice to vociferous warning. Brakes screeched, as the apparatus slid to a halt at the hydrant, the connection was instantly made, the pump started, and a heavy stream shot into the air, to the joy of the spectators. So far, so good!

But at this point, the hilarity of the "Boys" at the possession of so fine an engine overcame, apparently, their discretion. At any rate, the next move was to turn the nozzle toward the spectators, so that they would receive the full benefit of the spray from the stream.

The majority of "those present" had followed out the warning given and had donned their old clothes. So that the pleasantries of the Fire Department were taken mostly in good part and with a spirit of sportsmanship. However, in the crowd there were two strangers, who could not appreciate the feeling of exuberance of the firemen and the people in their new means of fire protection. Perhaps, too, these individuals had not been advised of the warning to don old clothes. At any rate, filled with rage at being thus unceremoniously drenched, they proceeded to bombard the Fire Department with rocks and other effective missiles, so that, besides marring the beautiful red paint of the apparatus, they succeeded in gashing the hand and breaking the nose of one of the firemen.

The men were arrested and punished, but it is safe to say that, hereafter, the Fire Department of this town will confine its throwing of streams to the denching of buildings and not of the spectators.

EASTERN CHIEFS' ASSOCIATION MEETS IN ATLANTIC CITY, N. J.

Fourth Annual Convention is Held, with Large Attendance—Lengthy Discussions of Papers—Growth of the Association

THE fourth annual convention of the Eastern Association of Fire Chiefs, a sectional division of the International Association of Fire Chiefs, was held in Atlantic City, N. J., June 19 and 20. Fire Department officials of New York and Philadelphia contributed in a large measure to the lively discussions. Fire Chiefs from the southern part of New Jersey who were experienced in fighting brush fires, led the round table discussion on that subject.

Chief Charles W. Greenfield, President

The convention was opened by President Charles W. Greenfield, who is also President of the New Jersey Fire Chiefs' Association, which position he has held for thirteen years, and an active member of the International Association of Fire Chiefs for twenty-five years. He has served as Chairman of the Exhibit Committee of the I. A. F. C., and of other important committees. He was Chief of the Kearny, N. J., Fire Department for seventeen years, and retired in 1922. He is at present in charge of fire protection of the DuPont Visciloid Company, Arlington, N. J. He is a life member of the New Jersey State Firemen's Association, having held membership for thirty years, and is also a life member of the New Jersey Exempt Firemen's Assocation.

One of the outstanding features of the convention was the paper on "Problems of Volunteer Fire Departments," that was presented by Chief M. M. Tawney, of Harrisburg, Pa. In his paper Chief Tawney explained how a volunteer Fire Department functions in his city that has a population of 82,000 and he told in detail the routine for training and drilling the volunteer firemen.

John G. Niethammer, Chief of Reading, Pa., and Chief John J. Brennan, of Pelham Manor, N. Y., participated in the discussion. In fact this paper resulted in so many discussions, that it was necessary to call a halt because of lack of time.

Chief John J. McElligott, of the New York Fire Department, was unable to attend but his subject "Training of Firemen," was handled by New York Fire Department officers who were present.

Morris F. Abel, Drillmaster of the Atlantic City Fire Department, spoke on "Drill Schools." It was received with enthusiastic applause. He explained the proper method to follow in handling drill schools.

During the discussion on forest fires, Chief Phillips, of Hammonton, N. J., stated that in his opinion, as long as the State paid compensation for fighting forest fires, it would be difficult to reduce the number of these fires. He believed that many of them were started by persons who wished to earn money by helping to extinguish the fires. Others agreed with the theory of Chief Phillips.

There was no election of officers, for the present officeholders were elected at the 1930 convention in Baltimore for a two-year term. New officers will be elected at the 1932 convention, which will be held in Wilmington, Del. Other cities that extended formal bids to entertain the convention were Harrisburg, Pa., Asbury Park, N. J., and Philadelphia, Pa.

The Eastern Association is growing rapidly and now has a membership of 2,400.

Northwest School Meets in September

A number of distinguished men will have active parts on the program prepared for the fourth Northwest Fire School which will be held September 21-25 at the University of Minnesota, Minneapolis, with demonstrations and drills at the Minneapolis Fire Department Drill School. The school is being sponsored by the League of Minnesota Municipalities, the General Extension Division, University of Minnesota, the State Firemen's Association, the Minnesota State Insurance Department, and the cities of St. Paul and Minneapolis.

According to present plans, the following will be features of the school:

Frank C. McAuliffe, Chief, Chicago Fire Patrol—Explanation and Demonstration of Salvage Work by Firemen.

Clarence Goldsmith, Assistant Chief Engineer, National Board of Fire Underwriters, Chicago—Fire Department Hydraulics.

Dr. C. B. White—Chemist, Elmira, N. Y.—Chemistry of Fire Fighting.

George Knoll, Chicago—Gas Masks, Their Types, Uses and Limitations.

Dr. David J. Price, Engineer in Charge, Chemical Engineering Division, U. S. Department of Agriculture—Dust Explosions and Spontaneous Combustion Fires.

There will be other speakers.

Practice in modern firemanship will be under the direction of Battalion Chief George Lockhart, Director of the Minneapolis Fire Department Drill School, and an able staff of assistants. A complete course in first aid will be conducted under the direction of Frank S. Crawford of the U. S. Department of Mines.

The only charge for the school is a one dollar registration fee. For further information write to Director of Northwest Fire School, Room 16, University Library, Minneapolis, Minn.

Chief Mark Ryan Injured—Chief Mark Ryan of Redwood City, Cal., former President of the Pacific Coast Association of Fire Chiefs, was seriously injured while responding to an alarm. The city has a high traffic hazard. Although his injuries were painful and serious, reports indicate that dicate that he will soon be well again.

THE COVER ILLUSTRATION

Although prominent Fire Department officials are training their men and officers to the realization that small streams are often just as effective and considerable water damage is thereby eliminated, there are times when heavy streams are imperative. Small lines would be futile where the flames are advancing rapidly. The fire illustrated occurred at the plant of the Balsa Wood Company in the Red Hook section of Brooklyn, N. Y. The building contained highly inflammable stores and the fire threatened a nearby parochial school housing 450 children. Note the firemen using a ladder as a battering ram in pushing down the weakened wall.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Pressure in Hose Line

To the Editor:

Will appreciate your assistance very much if you will answer the following question to settle a dispute:

Question: Will the pressure on a line of hose (6 lengths of 2½" with a 1¼" open nozzle, water flowing) be the same 5 feet from the nozzle as the pressure on the line 5 feet from the pumper discharge gate? Will the pressure be the same at both places or will the pressure behind the nozzle be reduced, due to friction loss through the 6 lengths?

F. A. K.

Answer: The pressure will be lower near the nozzle than at the supply or discharge gate end of the line due to the fact that pressure is lost in friction. As an example, where the flow is in the neighborhood of 250 gallons per minute, the friction loss would be somewhere around 15 pounds per 100 feet. If the pressure at the engine, or the inlet end of the line of hose is 100 pounds, the pressure 100 feet further on will be 15 pounds less, approximately. That is why we require higher pressures at the engine the longer the lines of hose.

Sprinklers and Dangerous Buildings

To the Editor:

Will you please answer the following questions?

No. 1. How much space is required below sprinklers to obtain best results?

No. 2. Why are fire department connections provided for sprinklers?

No. 3. What buildings when on fire are most dangerous for firemen to enter?

K. A. F.

Answer: 1. The usual rule is to allow 24" clear space between sprinklers heads and any storage these heads are to protect. Hence two feet may be considered as the required distance between sprinkler heads and stock below.

2. Fire Department connections are provided to sprinkler systems to make possible the continuous supply of water to sprinkler heads in the event of a large fire. The sprinkler tank, or tanks, are usually capable of supplying the sprinkler system with water for a comparatively short time and, in the event of a prolonged fire, water must be supplied by the fire department. Hence the siamese connections on the sidewalk in front of the building.

3. Buildings of insecure construction, wherein fire has been smoudering for some time, are considered the most dangerous for firemen to enter. In this case there may be back draughts or the floors may give way due to weakening from fire.

Outside Runs

To the Editor:

I have been reading FIRE ENGINEERING for ten years and would appreciate your answering a few questions for me.

We have stopped making country runs, as the insurance company does not pay us for them. However, they are now asking us to start making these runs again at $25.00 for each run. This sum will not pay expenses. We have four paid men and the balance volunteers. There are two paid men on duty at all times and when one of these men goes into the country in answer to an alarm it naturally makes us short.

I suppose the town has an insurance rate based on the equipment available. If we have one piece of equipment in the country and do not have enough hose on the other to reach the fire and it is necessary to go back to the station for additional hose, is the city held liable if the building burns down while more hose is being secured?

We do not want to make country runs as it leaves us handicapped in the city in the event of a fire breaking out.

I would appreciate anything you might have to say on the subject. V. N. H.

Answer: In the August 7th and 21st issues of FIRE ENGINEERING of last year there appeared a very complete discussion on the question of responding to calls from rural or neighboring communities, and the charge, if any, to be made for answering such calls. The discussion brought out that where a city has a large number of pieces of apparatus they gladly answer calls from outlying communities and make no charge whatever to the troubled district. However, where the number of pieces of apparatus is limited, it might be termed an injustice to the residents of the city or municipality to have the community jeopardized for the sake of protecting property outside of the corporate limits.

When an insurance inspection or rating bureau visits a town to determine the key rate, they take into consideration all the pieces of fire apparatus and equipment that could normally be used in fighting a fire. With limited equipment, when one or two units leave the corporate limits to fight a fire in the country, the basic fire protection of the municipality is entirely changed. The apparatus and equipment that the inspection or rating bureau figured on when determining the key rate, no longer exists. In fact, where it is a practice to make long runs into the country and leave a large part of the municipality without fire protection, insurance interests have threatened to cancel policies for the period that the apparatus has left the corporate limits.

We believe a charge of $25 a run is not at all liberal. In Meadville, Pa., the department charges $50 for the first hour and $25 for every hour thereafter for fire runs outside of the corporate limits. In Bluffton, Ind., a charge of $25 is made for the first mile, and $10 for each additional mile. When arriving at a fire there is a charge of $10 an hour for pumping and laying of large hose. When chemicals are used, only the cost of recharging is figured on. In Canton, Ohio, the charge is $25 for the use of the apparatus and $1 an hour for each man. Fredonia, N. Y., charges $50 for the first hour and $10 for every additional hour.

Pittsburgh, Ohio, has an arrangement which should be of value in solving your problem. Property owners residing outside of the corporate limits are required to sign a contract, stating that they will pay the community a certain charge within 30 days after the fire has occurred. In other places the rural residents organize and buy a piece of fire apparatus which is housed within the fire department building. The rural residents permit the municipal fire department to use the apparatus and in return for that the department responds to outside calls and mans the equipment.

Chimney Fires

To the Editor:

Will you kindly give me some information regarding the cause of house chimney fires?

B. A.

Answer: Accumulation of soot in a chimney, and subsequently ignition of such soot, produces chimney fire. Most chimney fires start in the fall when heating apparatus is put into operation for the winter. The soot in the chimney, left by the previous winter's fires, drops and accumulates

near the base of the chimney, and when the fire is put in the furnace or stove in the fall, the flames from the combustible material commonly employed in starting fires reach the chimney and may ignite the accumulated soot. Once the soot at the base of the chimney takes fire, the fire quickly spreads up along the film of soot around the inside of the chimney, and may ultimately involve the interior of the chimney in the entire length.

OHIO FIRE CHIEFS HOLD THEIR ANNUAL CONVENTION IN AKRON

One Day Devoted to Demonstrations and Tests of Apparatus—Chief Edward Green of Steubenville Elected New President

By R. B. CRISWELL

Engineer, Ohio Inspection Bureau, Columbus

A DISPLAY of exhibits that is claimed to have rivaled the ones arranged for the I. A. F. C. gatherings, was part of the fourteenth annual convention of the Ohio Fire Chiefs' Convention, held in Akron, Ohio, June 9-12. The Pirsch smoke ejector and other apparatus and equipment were demonstrated.

Chief Edward Green,
Steubenville, O., President

Chief John A. Grogg of Tiffin, President, opened the convention. The chiefs were welcomed by C. Slusser, Vice-President and Factory Manager of the Goodyear Tire & Rubber Company and by Hon. G. Lloyd Weil, Mayor. Chief James E. Granger of Cleveland responded.

In the afternoon, Chief Granger presented a paper on "Building Inspection." Mrs. Ethel Millhone, of the State Fire Marshal's Office, Columbus, spoke on "School Inspection."

On Wednesday morning, J. T. Kidney, Manager of the Employees' Service Division, Goodyear Tire & Rubber Company, gave a talk on "Safety Precautions in Fire Prevention." He stressed the value of education and the importance of building inspections. Harry Rogers, of the Western Actuarial Bureau, Chicago, spoke on "Fire Prevention." Dr. Harvey Walker of the Ohio State University discussed "The Fire School." Dr. Walker was largely responsible for the past fire school. The final talk on the forenoon program was by F. O. Evertz, Superintendent of the Electrical Department, Ohio Inspection Bureau, Columbus, on "Fire Doors and Stops." The talk was illustrated with one hundred slides, some colored.

Wednesday afternoon the first topic discussed was by Chief Joseph H. Speddy, of the Lakewood Fire Department, on "Important Facts Governing the Purchase of Fire Apparatus and Appliances." Chief Speddy went back into history to the old horse drawn days and cited the contrast between conditions then and now, told of the need of purchasing the particular kind of apparatus for certain conditions, and explained the desirability of securing the services of the Rating Bureau Officials when the purchase of apparatus is considered. District Chief Kirby, of Dayton, then discussed the present "Firemen's Pension Law" in Ohio, pointing out that the pensions are now in jeopardy due principally to the gross abuse of the law by able bodied men holding good jobs when on pension, and cited the fact that only very few communities forbid a pensioner holding other jobs. Chief R. E. Smith, of the Pittsburgh Fire Department, read a paper on "Salvage Work." It was largely a revised paper of the one he presented at the last I. A. F. C. convention. Chief Smith stressed the desirability of selling a Fire Department to the municipality by salvage work. He also pointed out that most any department has sufficient men for salvage work if they would only use them. A sound motion picture concerning salvage work was presented at the adjacent Rialto Theatre.

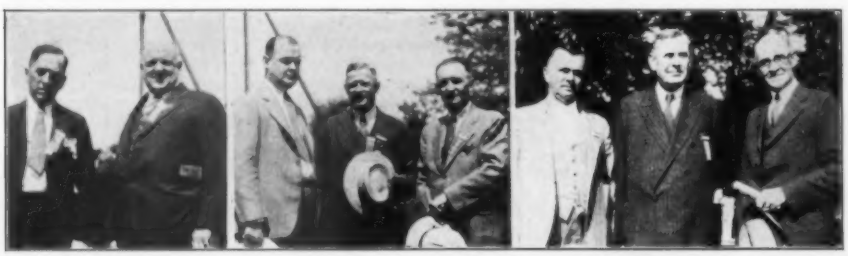
Crowds Watching the Demonstration of the Smoke Ejector

Mr. Pirsch is at the right front fender and is wearing a straw hat.

On Wednesday evening an excellent musical program and dance entertainment by local talent was presented in the Goodyear Theatre. The convention programs were held in this theatre and the many exhibits were arranged in the adjoining large Goodyear Auditorium.

The exhibition of apparatus and equipment at the Convention was the largest and best ever found in this State, and several nationally known authorities stated it was the best they have ever seen at any convention. Unusual exhibits were the smoke ejector demonstrated by Peter Pirsch personally, the large quadruple combinations shown by the Seagrave and Mack Companies, and the modern and highly efficient triple combinations shown by the other companies.

All day Thursday was devoted to demonstrations at Summit Beach Park. In the morning the pumping demonstrations were made with various types of pumpers. Early in the afternoon the first spectacular demonstration was the firing of three small houses to show the protective effect of Cellon paint. Then followed the extinguishing of a large oil fire by "Dri-Gas" manufactured by the Prospect Fire Apparatus Company. The smoke ejector was brought into action and rapidly cleared the thick smudge from a large room. Demonstrations were given of gas and smoke masks, carbon-dioxide extinguishers, etc. The Cuyahoga Falls Fire Department demonstrated the use of small lines, drafting water under unusual conditions, ladder work, and finally an excellent demonstration of resuscitation methods. A barbecue lunch was served at noon. In the late afternoon the only address of the day was delivered by T. Alfred Fleming, of the National Board of Fire Underwriters, New York, on the "Progress Made in Fire Control and Prevention in Ohio Since 1913." The closing event of the day was the grand ball in the new ballroom of the Mayflower Hotel. About twenty-five of Akron's beautiful young ladies acted as hostesses.



Groups of Chiefs and Guests at the Ohio Chiefs' Convention

From left to right: Chief Edward F. Foran, Goodyear Tire & Rubber Co.; Battalion Chief Thomas E. Ryan, Chicago; Lester Stevenson, General Sales Manager, Seagrave Company; John Schellin, General Manager, Akron Brass Company, Wooster; Chief Mays, Mansfield; Chief Frank C. Arn, Westerville; Chief Joseph C. Speddy, Lakewood, and T. Alfred Fleming, National Board of Fire Underwriters, New York City.

The final day's session consisted of a joint meeting of the Municipal, Industrial, and Volunteer Chiefs, and a business meeting. The following officers were elected for the coming year:

President, Chief Edward Green, Steubenville, Fire Vice-President, Chief William Conlin, Hamilton; Second Vice-President, Chief W. J. Pflanzer, Lebanon; Secretary-Treasurer, Chief Philip J. Harty, Youngstown. Directors: Chiefs James E. Granger, Cleveland, E. F. Kuhnle, Port Clinton, and A. S. Stoer, Firestone Tire and Rubber Company, Akron.

Hamilton, Ohio, was selected as the next convention city.

Notable out-of-State visitors at the Convention were: Thomas E. Ryan, Chief of 11th Battalion, Chicago Fire Department; Chief R. E. Smith, Pittsburgh Fire Department; Chief "Dimples" McGranahan, Wheeling Fire Department; "Smoky" Rogers, of Chicago, and T. Alfred Fleming, of New York City.

Thanks were extended the Goodyear Tire & Rubber Company and to its Chief, Edward F. Foran, who worked so industriously to make this convention a success.

N. Y. DEPARTMENT HANDICAPPED AT FIRE ON 20TH FLOOR

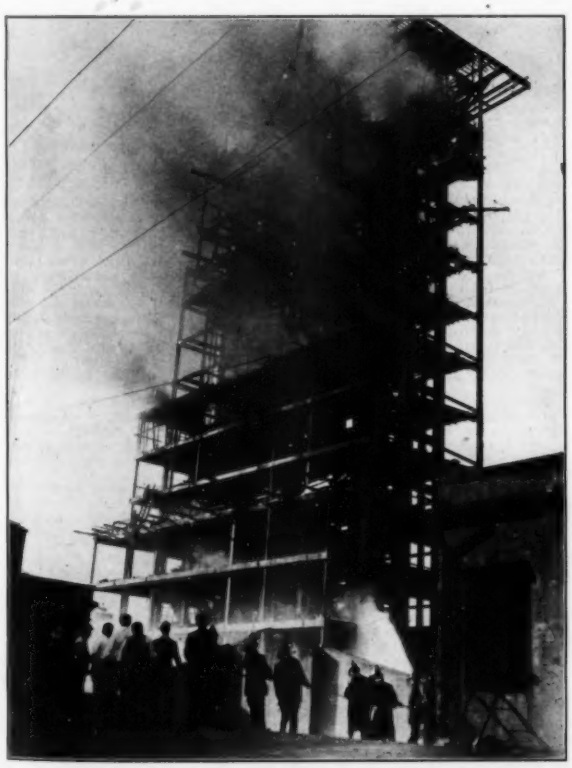
Streams Fail to Reach Burning Floor in Uncompleted Skyscraper—Chief Dougherty in Command—Second Fire of This Character

SPARKS from a riveter's forge are believed to have started the spectacular fire which reached the twentieth floor of the Starrett-Lehigh building, in the course of construction at Twenty-sixth Street near Eleventh Avenue, New York City, and to have presented the Fire Department with another puzzling blaze.

Acting Chief Thomas F. Dougherty assumed command on the third alarm.

Similar to the Sherry-Netherland fire in 1927 when Chief Kenlon was in command, there were wooden scaffolding and forms on the upper floors.

The flames were noticed simultaneously by persons over a wide area, and a number of alarms were turned in at 5.20 p.m. Workmen rushed for the hoist in the front part of the building which was still untouched by the fire, and as soon as the hoist was down, firemen, started going up with coils of hose to attach to the standpipe. Soon a dozen streams were in use but made little headway against the strong wind. Sparks started minor fires in nearby buildings, so that twice firemen had to be called to fight the blazes started by the burning embers.



The Fire in the Uncompleted Starrett-Lehigh Building in New York City

An attempt was made to reach the flames from the roof of a nine-story building opposite and from the fifteenth floor of the front section of the large warehouse and factory building. Pressures well over 1,000 pounds were forced into the standpipe, but length after length of hose was burst at this excessive internal water force.

While the flames were at their height, a gasoline drum went hurtling into the air and bounced down through the building. At times heavy ten-foot planks would break loose and go sailing to the street, but firemen had ample time to get out of the way.

For a time it was feared that a derrick on the top floor had been loosened by the heat, and an automobile with siren wide open, sped around the block to give warning.

Deputy Chief John J. T. Waldron said that the firemen had been delayed from fifteen to twenty minutes when they arrived because the brass niples to which the hose lines are attached, were missing from the standpipe on the sixteenth and seventeenth floors. The removed nipples were in the custody of the Chief Engineer and were taken off at night to prevent theft.

At the Sherry-Netherland Hotel fire four years ago, firemen could not reach the burning scaffolds with their streams and had to be content with extinguishing the many small fires started by the embers.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

	Loss in Thousands of Dollars
Week Ending July 10	
HARTFORD, CONN.—Business property at S. Antupitsky estate	25
VISALIA, CAL.—Levy bldg., Court St., damaged	25
ATTICA, KAN.—Mill property occupied by Imperial Flour Mills Co.	80
PORT ARTHUR, TEX.—Oil barge and tanker of Gulf Refining Co.	400
FORT WORTH, TEX.—Carleton Hotel and adj. property	65
BOSWELL, PA.—Several garages and dwellings damaged	80
WARDEN, MONT.—Masonic Hall, adjoining business property	25
SHELTON, WASH.—Whse. of Puget Sound Freight Line, adj. dock	30
PROVIDENCE, R. I.—Yacht of John J. Orr, destroyed	25
LOS GATOS, CAL.—Home of Richard Bennett destroyed	35
FITZGERALD, GA.—Warehouses of Atlanta, Birmingham R. R.	25
HARPINGTON, NEB.—W. A. Grant garage and 35 automobiles	40
LYNN, MASS.—Sluice Pond ice houses destroyed	25
WHITEHAVEN, TENN.—High school bldg. damaged	65
RICHMOND, IND.—Colony House at Richmond State Hospital	30
LOS ANGELES, CAL.—Stationers' Corporation Whse., adj. property	80
NEW HAVEN, CONN.—Broadway business property damaged	40
MAPLEWOOD, MO.—Wolfsberger bldg. damaged	50
DETROIT, MICH.—Furniture mart and three other concerns	160
HARRINGTON, ME.—The Harrington House destroyed	80
LAFAYETTE, KY.—Post office, several other business establishments	25
WATERVLIET, N. Y.—Coal and junk yards of J. Trantwein	40
WAUNAKEE, WIS.—Sunny Side Chicken Hatchery destroyed	25
FULTON, KY.—Property occupied by Homra Bros. Dry Goods Co.	35
MARTY MISSION, S. DAK.—Industrial bldg. at Catholic School	25
DURANGO, COLO.—White House, rooming house, adj. property	250
MONTREAL, QUE.—Business property at 5-9 Olier St.	65
Week Ending July 17	
EDEN, TEX.—Several business establishments destroyed	30
SAVANNAH, GA.—Plant of the Pineland Turpentine Co.	25
MARSHALL, MO.—Laundry at Missouri State School	45
PULASKI, WIS.—Store of M. Prokopovitz damaged	30
BELLA, IOWA—Several business establishments damaged	30
UPPER SUGARTOWN, N. Y.—Cheese factory of Moore Bros.	25
WEBB, SASK.—Post office, Royal Bank and municipal offices	80
CLINTON, N. J.—The Clinton House, Eugene Decleene, owner	45
POMPANOOSUC, VT.—Store of Perry Goodhill, adj. property	30
CORCORAN, CAL.—Cotton gin and oil plant of J. G. Boswell Co.	800
BURBRIDGE, QUE.—Temperance Hotel, adj. property	60
VERDENBURG, ALA.—Property of Verdenburg Saw Mill Co.	65
ST. JOHNS, QUE.—Premises of Windsor Canning Co., Ltd.	40
CRAFTSBURY, VT.—Business and residential property destroyed	30
LEWISTON, IDAHO—1250 acres of wheat on three ranches	30
PITTSBORO, N. C.—Several business establishments	25
GREENCASTLE, IND.—True-Hixon Lumber Yard, adj. property	80
FORGE VILLAGE, MASS.—Ice house of Daniel Gage, Inc.	80
CLIFTON HILL, MO.—Nine business houses destroyed	40
NASHVILLE, TENN.—Plant of Eisele & Co. destroyed	200
BUFFALO, N. Y.—Buffalo Cement Co. bldg. destroyed	35

Fire House Opened in Parsons, Pa.—A new fire station was formally dedicated in Parsons, Pa.

SPECIAL TRAIN OFFERS QUICK TRIP TO HAVANA CONVENTION

I. A. F. C. Announces Reduced Fares on Special to the Chiefs' Gathering—Schedule, Rates, Etc.

ANNOUNCEMENT has been made from the offices of the International Association of Fire Chiefs that reduced rates have been secured to Havana, Cuba, for the 59th Annual Convention, October 14 to 17, inclusive, from all points in the United States and Canada on a more reasonable basis than has ever before been authorized.

Tickets will be sold to all members, their families and friends without the usual identification certificate which has heretofore been required; it is only necessary to apply to the local ticket agent for the purchase of these tickets, which will be on sale on such dates as will enable all to arrive in Havana in ample time to register, get conveniently settled in the hotel and answer to the call on the opening date.

The tickets will be limited to 15 days, in addition to the date of sale and will allow stopovers enroute and not require validation at destination. They will also include meals and stateroom accommodations aboard the Peninsular and Occidental Steamship Company Steamers operating between Key West, Fla., and Havana, Cuba, the route of the President's Special.

Following is the announcement, which shows the approximate round trip fares to Havana from a few scattered cities throughout the United States and Canada:

FROM

Denver, Colo.—Via Chicago	$143.27
Denver, Colo.—Via St. Louis	129.12
Denver, Colo.—Via Memphis	130.26
Des Moines, Ia.—Via Chicago	104.25
Des Moines, Ia.—Via St. Louis	96.18
Chicago, Ill.	83.62
St. Louis, Mo.	76.64
New Orleans, La.	65.88
Houston, Texas	87.72
Birmingham, Ala.	58.66
Jacksonville, Fla.	41.63
Memphis, Tenn.	66.05
Richmond, Va.	68.26
Pittsburgh, Pa.	90.32
Philadelphia, Pa.	80.72
Washington, D. C.	72.88
Boston, Mass.	99.12
New York, N. Y.	85.91
Buffalo, N. Y.	98.02
Cincinnnati, Ohio	74.10
Louisville, Ky.	72.67
Minneapolis, Minn.	107.08
Detroit, Mich.	89.11
Atlanta, Ga.	55.08
Montreal, Canada	109.12
Toronto, Canada	105.35

Pullman Fares

Pullman fares extra.

Schedule of President's Special

International Association of Fire Chiefs Enroute to Havana, Cuba and Return. Route: P.R.E.—R.F. & P.R.R.—A.C.L.R.R.—F.E.C.Ry.—P. & O.S.S.Co.:

SOUTHBOUND:

Sunday,	October	11th—Leave New York	P.R.R.	6.45 P.M.
Sunday,	October	11th—Leave Newark, N. J.	P.R.R.	7.08 P.M.
Sunday,	October	11th—Leave Trenton	P.R.R.	7.52 P.M.
Sunday,	October	11th—Leave N. Philadelphia	P.R.R.	8.33 P.M.
Sunday,	October	11th—Leave W. Philadelphia	P.R.R.	8.45 P.M.
Sufiday,	October	11th—Leave Wilmington	P.R.R.	9.29 P.M.
Sunday,	October	11th—Leave Baltimore	P.R.R.	10.40 P.M.
Sunday,	October	11th—Arrive Washington	P.R.R.	11.30 P.M.
		Leave Washington	R.F. & P.R.R.	11.40 P.M.
Monday,	October	12th—Arrive Richmond	R.F. & P.R.R.	2.25 A.M.
Monday,	October	12th—Leave Richmond	A.C.L.R.R.	2.40 A.M.
Monday,	October	12th—Leave N. Charleston	A.C.L.R.R.	11.20 A.M.
Monday,	October	12th—Leave Savannah	A.C.L.R.R.	1.55 P.M.
Monday,	October	12th—Arrive Jacksonville	A.C.L.R.R.	5.15 P.M.
Monday,	October	12th—Leave Jacksonville	F.E.C. Ry.	5.35 P.M.
Tuesday,	October	13th—Arrive Key West	F.E.C. Ry.	8.20 A.M.
Tuesday,	October	13th—Leave Key West	P. & O. SS Co.	9.30 A.M.
Tuesday,	October	13th—Arrive Havana	P. & O. SS Co.	3.30 P.M.

NORTHBOUND

Saturday,	October	17th—Leave Havana	P. & O. SS Co.	10.00 P.M.
Sunday,	October	18th—Arrive Key West	P. & O. SS Co.	6.00 A.M.
Sunday,	October	18th—Leave Key West	F.E.C. Ry.	9.00 A.M.
Sunday,	October	18th—Arrive Miami	F.E.C. Ry.	1.00 P.M.
Sunday,	October	18th—Leave Miami	F.E.C. Ry.	3.30 P.M.
Monday,	October	19th—Arrive Jacksonville	A.C.L.R.R.	12.01 A.M.
Monday,	October	19th—Leave Jacksonville	A.C.L.R.R.	12.15 A.M.
Monday,	October	19th—Arrive Richmond	A.C.L.R.R.	2.15 P.M.
Monday,	October	19th—Leave Richmond	R.F. & P.R.R.	2.25 P.M.
Monday,	October	19th—Arrive Washington	R.F. & P.R.R.	5.10 P.M.
Monday,	October	19th—Leave Washington	P.R.R.	5.30 P.M.
Monday,	October	19th—Arrive Baltimore	P.R.R.	6.20 P.M.
Monday,	October	19th—Arrive Wilmington	P.R.R.	7.44 P.M.
Monday,	October	19th—Arrive W. Philadelphia	P.R.R.	8.16 P.M.
Monday,	October	19th—Arrive N. Philadelphia	P.R.R.	8.28 P.M.
Monday,	October	19th—Arrive Trenton	P.R.R.	8.54 P.M
Monday,	October	19th—Arrive Newark, N. J.	P.R.R.	10.28 P.M.
Monday,	October	19th—Arrive New York	P.R.R.	10.51 P.M.

Reservations

The "President's Special" will leave Pennsylvania Station, New York for Key West, Florida, at 6.45 P.M., Sunday, October 11th, and will be operated via P.R.R. to Washington, R.F. & P. to Richmond, Atlantic Coast Line to Jacksonville and Florida East Coast Railway to Key West, Florida at which point the party will be officially met by Mayor Tirse Mesa, of Havana, Cuba, Col. F. J. Mayato, Chief of the Havana Fire Department, and other prominent Cuban officials, after which all will board the new palatial S.S. Florida, of the P. & O. Steamship Company for Havana, Special ceremonies have been arranged following the arrival of the ship at the entrance to the Havana Harbor, bearing the official party.

The ship will be especially decorated and will be officially greeted by the Cuban Army Planes and escorted to the docks where other prominent Cuban officials will welcome the party. On the dock will be the municipal band. Representatives of the Movietone and Paramount Picture Corporations will make pictures of the arrival which will be included in newsreels and shown throughout Cuba and the United States. Cuban custom officials will extend the courtesy of the port to all members of the party.

This train will operate in two sections, if necessary, and reservations which will automatically include steamer reservations will be by B. F. Fuller, A.G.P.A., Atlantic Coast Line Railroad, 8 West 40th Street, New York City.

Those who desire reservations on regular trains should apply to their local passenger representatives or ticket agents requesting them to apply to Austin Williamson, Jr., Special Representative of P. & O. S.S. Co., Jacksonville, Florida, for steamer reservations from Port Tampa, Florida, or Key West to Havana.

Hotels in Havana

Havana has ample hotel facilities to comfortably take care of all. The Plaza Hotel has been officially designated as the Headquarters hotel for the Association. The Sevilla-Biltmore has been designated as the official hotel for the ladies. Both hotels are within three minutes walk of each other. The Havana Hotel Association is composed of the leading and most responsible hotels in the city, and through arrangements made by your Association, they have designated Mr. Rene Bolivar, resident manager of Plaza Hotel, Havana, Cuba, to receive the reservations from all members, their families and guests. It is suggested that all of those contemplating attending the Havana meeting get in touch with Mr. Bolivar for their hotel reservations. This will avoid confusion and delay after your arrival there and also insure your being in one of the better hotels there.

Rates

In accordance with arrangements made by your Association, all hotels, members of the Havana Hotel Association, have agreed to charge $4.00 per day, single, and $7.00 per day, double European plan.

Passports and Income Tax Clearances

Going to Cuba.—Passports are not required of citizens of the United States or admissable aliens, entering Cuba from United States ports. Persons of the Chinese race, regardless of citizenship, must have special permission of the Cuban Immigration Department before they will be admitted. Gypsies, regardless of nationality, will not be permitted to land in Cuba.

Income tax clearances are not required of citizens of the United States, but are required of aliens. This clearance of sailing permit must be secured from U. S. Income Tax Inspector at port of departure. Same is issued upon payment of income tax to inspector, or presenting satisfactory evidence showing that the tax has been paid or the person is exempt.

Returning from Cuba.—Citizens of the United States are not required to hold passports. As a precautionary measure, however, in order to avoid possible delay and facilitate re-entry into the United States, it is advisable for naturalized American citizens to have in their possession their final naturalization papers.

Aliens previously lawfully admitted for residence and now domiciled in the United States who wish to make a temporary visit to Cuba and return to the United States, should make application to the Commissioner General of Immigration, Washington, D. C. for "Re-Entry Permit," as without this document or adequate proof of previous lawful admission for residence they may be unable to secure return booking and re-entry.

Citizens of other countries not mentioned above, must hold passports or immigration vises as required by the United States, and also be able to comply with all Government regulations respecting their entry into this country.

Booking Passage from Havana to U. S. Ports

All passengers must have names entered on passenger list, secure baggage declarations, etc., at P. & O. City Ticket Office, Prado No. 77, Havana, at least one day prior to departure, as compliance with regulations makes it impossible to book passengers in Havana on the morning of the day of sailing.

(*Continued on page* 548)

Ex-Chief Johnson of Brookline Dead

Ex-Chief George H. Johnson, of Brookline, Mass., died on July 9 at his home on Thayer Street, Brookline, in his eighty-first year. He had been in failing health for some time. He was a member of the Brookline department for fifty-three years and served as Chief for forty-seven years. He was born in Lewiston, Me., and moved to Brookline with his parents when a child.

In 1870 he joined a hand tub fire company as a callman while working at his trade of carpenter. He was soon made a permanent fireman and later promoted to captain. In six years he became Chief, the position being made permanent in 1896.

He saw the hand tubs replaced by steamers and horses and these in turn superseded by the modern gasoline pumper. Chief Johnson was retired on pension in October, 1923. He was a fireman of the old school and never took a vacation, responding to every alarm of fire in the town. He took part in fighting the Great Boston Fire of 1872 with a Brookline Engine company, which answered the call for aid.

HARRY BELKNAP.

Newly Elected Chiefs

The following have been elected to head the Fire Departments in their respective municipalities:

Wymore, Neb.—C. A. Lasher
Hatfield, Pa.—Elmer Zepp
West Bend, Wis.—George Keuhlthau
York, Me.—Albert Ramsdell
Kiel, Wis.—Herman Lettenberger
Iron Ridge, Wis.—Frank Raue
Brawley, Cal.—William A. Fuller
New Gretna, N. J.—Stanley Bozarth
Pocatello, Idaho—Ben Joseph
Pottsville, Pa.—George A. Smith
Poteau, Okla.—Bryan Stevens
Panama City, Fla.—R. L. Caswell
Washougal, Wash.—Tom Jenny
Lynwood, Cal.—Robert L. Dunlap
Kewanee, Ill.—Frank Williams
Kelso, Wash.—A. L. Crump
Lucerne-in-Quebec, Canada—Major G. R. Lane.
Bellevue, Cal.—Emory Sandstrom.
South Bend, Wash.—D. F. Coulter.
Blooming Prairie, Minn.—Ross Hollowell.
Blanchardville, Wis.—W. E. Gould.

Ohio Volunteer Firemen Meet

Many amusements and entertainment features were arranged for those who attended the fifty-eighth annual convention of the Northwestern Ohio Volunteer Firemen's Association, held at Port Clinton, Ohio, June 17. A large number of firemen arrived with their families to enjoy an all-day outing.

The principal address was made by Miss Ethel Milhone of the State Fire Marshal's Office. Other speakers were Chief Edward Kuhnle of Port Clinton, A. L. Duffy, attorney of Port Clinton, and Frank Ottne of Gibsonburg.

Immediately after lunch there was a large parade in which a colored regiment from Camp Perry joined. Later in the afternoon there were drill competitions, a water fight and various other amusements. There were free boat rides on Lake Erie and free bus rides around the peninsula district. In the evening a sham battle was staged by members of the 372nd Ohio National Guard Infantry and a display of fireworks.

The 1932 convention will be held in Gibsonburg some time in June.

The new officers are President, John Gardner, Ashland; Vice-President, Lloyd Edgar, Wauseon; Secretary, C. R. Bowersox, Toledo, and Treasurer, W. L. McFadden, Bryan.

R. B. CRISWELL.

Dr. Scannel Named Fire Commissioner

Dr. Joseph W. Scannel, prominent surgeon of Lewiston, Me., and for many years fire surgeon, has been named Fire Commissioner of Lewiston, Me., for a five-year term. The appointment will be effective from August 1.

Dr. Scannell has been interested in the department for years and besides serving as fire surgeon, he organized and trained the life saving crew. He is a past president of the Androscoggin County Medical Association and in one of the senior operating surgeons of the C. M. G. Staff.

Andalusia, Ill., May Erect Station—Volunteer firemen of Andalusia, Ill., are raising funds to finance the construction of a new fire station.

Davenport, Ia., Holds Open House—A large crowd attended the open house in Davenport, Ia., to mark the opening of a new fire station.

Chicago Firemen Use Inhalators

Three Rescue Squads of the Chicago Fire Department have been equipped with combined resuscitators and inhalators. The value of these devices was demonstrated at the time of the Chicago tunnel disaster, in which seventy-two persons were overcome. At that time the E & J Sales Corporation had a number of their machines in stock, and as soon as word of the disaster reached them, the machines were rushed to the Chicago Fire Department. Firemen used the E & J machines alone at the disaster. In a letter of appreciation to the company, Chief Corrigan gave the new machines credit for reviving sixty of the seventy-two victims.

The machines, according to the manufacturers, establish breathing impulses that are automatically adapted to the lung capacity of the victims and may even be safely used in the case of new born infants. The pressure cannot go beyond four ounces.

Lansing Has New Fire Station

An attractive building has been placed in service in Lansing, Mich., as Station No. 8. It was erected at a cost of $35,000.

On the first floor there is the apparatus room, fire alarm space, lounging and dining rooms, kitchen, locker room for rubber goods, general store room and toilet.

On the second floor there is a large dormitory, captain's room, locker room, toilet and shower room, and two small store rooms. The basement has been finished off to serve as a large community room.

The hose tower is accessible from the first floor and basement.

The exterior of the building is of red face brick with steel casement windows. The interior walls are of white

Station No. 8, Lansing Mich.

hard finished plaster, except those in the apparatus room which are of brown tile. All woodwork is finished in natural oak. The apparatus room floor is of red tile and all the other floors are of maple.

DONALD DERK.

Arson Ring Found in Philadelphia

Two Philadelphia manufacturers were arrested by local police in a round up of an alleged $1,000,000 arson ring. It is said that one of the men collected $360,000 in insurance following a fire in a luggage factory An insurance adjustor was also arrested.

According to Judge Harry S. McDevitt, who started the investigation, the gang has operated in and about Philadelphia for at least ten years and the damage done by manufactured fires was estimated at well over $1,000,000.

The alleged torch of the ring was arrested in Atlantic City, N. J., and he has identified some of the men who hired him to start the fires.

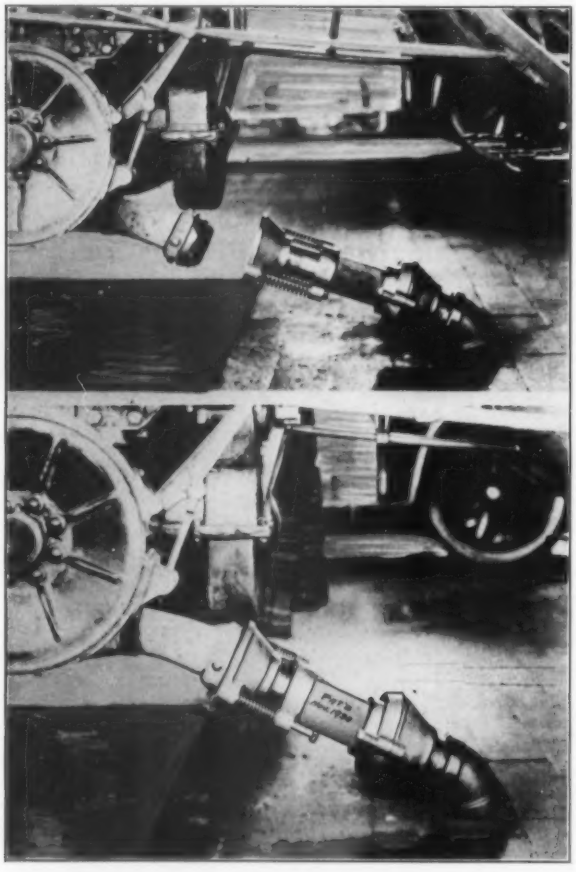
EDWARD H. SPRANGERS.

Fall River, Mass., Ladder Damaged—One fireman was badly injured when a ladder truck in Fall River, Mass., crashed into four parked cars at the curb.

Tube Carries Off Exhaust Gases

A flexible metal tube with connection has been designed by J. B. Yazel, Master Mechanic, Marion, Ohio, Fire Department, to carry off the exhaust gases of the motor while the engine is running in the fire station.

The device is rather simple and is connected to the exhaust line of the apparatus while in the station. When an alarm comes in, the flexible tube can be quickly disconnected. All joints are ground to fit perfectly and a sliding sleeve helps to make a perfect joint.



Two Views of the Yazel Exhaust Connection

Upper photograph shows the apparatus moving into position so that the exhaust pipe will be pressed against the connection attached to the line that will carry off the exhaust gases. Lower—the connection made so that the gases will be carried out of the station instead of blackening the walls and endangering the men.

Special Train to Havana Convention

(*Continued from page* 546)

Tax

There is a $3.00 tax assessed by the Cuban Government against all first-class passengers leaving the Island. This is collected at the time return reservations are booked.

Returning residents of the United States are allowed to bring with them free of duty, bought abroad and not intended for sale or bought on commission, one hundred dollars' worth of merchandise such as wearing apparel, curios, souvenirs, or any article intended for household use, fifty cigars or three hundred cigarettes. Anything above these figures is subject to duty.

General

Havana, the capital city of the Republic of Cuba, intermingling an historic and romantic past with ultra-modern customs, never fails to thrill the visitor within her gates. A trip to this enchanted city leaves one with glowing memories of pleasant and novel experiences never to be forgotten.

In charge of preparations for the convention is the Hon. Tirso Mesa, Mayor of Havana, and President of the Cuban National Tourist Commission. Working hand in hand with him is Col. Jos. F. Mayato, Chief of the Havana Fire Department.

On the program, which already has been drawn up and approved, are parades, dinners, dances, sightseeing trips and a host of other entertainment, all so typically Cuban that they can hardly be compared with the usual convention amusements to be found in the United States.

Make your arrangements now to attend this convention. You will never regret it. The Peninsular and Occidental Steamship Company, Jacksonville, Fla., will be glad to mail you upon request, a beautiful descriptive booklet of Havana and the outlying territory.

Curtis Talks to Kansas Firemen

Charles Curtis, Vice-President of the United States, and Arthur Capper, U. S. Senator, spoke to the Kansas firemen assembled at a banquet which was part of the program of the third annual Firemen's Short Course held in Topeka, June 8-10.

Both speakers stressed the valuable service that firemen render to society and they praised the fearless efforts of fire-fighters to save life and property. The firemen expressed their appreciation of the remarks by unanimously voting to make Vice-President Curtis and Senator Capper honorary life members of the Kansas State Firemen's Association and each one was presented with a gold badge.

The school was the most successful held thus far and 250 registered. Subjects presented included lightning and lightning protection, first-aid fire-fighting appliances together with demonstrations of fire extinguishers, arson, chemistry, of fire, hydraulics of fire streams, fire prevention in the Fire Department and drills, training and life saving.

Chief George R. Ward, Drillmaster, St. Louis Fire Department, was instructor in Drills, Training and First Aid. Frank R. Daniel, Chief Engineer of the Wisconsin Inspection Bureau, talked on "First Aid Fire Fighting Equipment" and this was followed by demonstrations of the various types of extinguishers in putting out various type fires. Radio talks were made by Richard E. Vernor, of Chicago, and Chief Ward, of St. Louis. Two motion pictures, "The Municipal Salvage Man" and "Modern Firemanship," were shown. The fire school is conducted under the direction of Kansas University.

The annual meeting of the Kansas Association of Fire Chiefs, the Kansas State Firemen's Association, and the Ladies' Auxiliary were held during the meeting. Rural Fire Protection was one of the main topics discussed. The firemen unanimously endorsed the idea of a universal telephone number for fire alarm service.

Garden City was selected as the meeting place for 1932.

Ex-Chief Kenlon Honored by Officers

A committee of officers representing the Officers' Association of the New York Fire Department called on former Chief John Kenlon, assured him that he would always be "Chief" to them, and presented him with a set of engrossed resolutions testifying to the fact that:

"In recognition of his conspicuous and honorable service in the Fire Department * * * our distinguished honorary member and esteemed comrade has chosen to retire from his high office which he so creditably occupied for over nineteen years * * * his unprecedented record of accomplishments in the field of fire extinguishment has made him an outstanding figure in fire department circles throughout this country and in other countries where the science of fire extinguishment is practiced and his retirement is viewed by his countless friends and associates as a great loss not only to the Fire Department of New York but to the entire fire fighting profession, and we deeply and sincerely regret the retirement of our peerless commander who by his inspiring leadership and exemplification of the virtues of loyalty, fairness and honesty of purpose has endeared himself to every one of us * * * and we hope that Divine Providence will continue to guide him in his journey through life and that his retirement will be accompanied with the desirable blessings of health, happiness and prosperity * * *"

The presentation was made by Capt. Walter Duggan, President of the Officer's Association. Chief Kenlon responded with manifest feeling of deep sentiment. He said it was nice to know that he had not been entirely forgotten. He admonished the committee in a kindly way to continue the best traditions and standards he had set. The committee in addition to Capt. Duggan consisted of Deputy Chief J. J. T. Waldron, Batt. Chief James J. Mooney, Capt. James F. Fennelly, Capt. Edward McGaffney, Lieut. Theo. Bielakoff and Lieut. John J. Martin. The resolutions were engrossed by Lieut. William Bauer.

WM. JEROME DALY.

Indianapolis, Ind., to Erect Stations—The City Council of Indianapolis, Ind., has approved an ordinance to appropriate $60,000 for the construction of new fire stations.

Chief Hapgood to Have Official Car—Chief Harry Hapgood of McPherson, Kan., is to have a Chevrolet coupe for responding to fires.

FIRE DEPARTMENT ACTIVITIES

Verona, Wis., May Buy Apparatus—Verona, Wis., is considering the purchase of fire apparatus.

Wildwood, N. J., Orders Apparatus—Wildwood, N. J., has placed an order for a 750-gallon pumper and equipment.

Monticello, N. Y., Buys Fire Apparatus—Monticello, N. Y., has voted to order new fire apparatus.

Fire House Opened in Davenport, Ia.—A new fire station to house Hose Co. No. 4 was opened in Davenport, Ia.

Lawrence, Mass., Has Department Ambulance—A new Fire Department ambulance has been placed in service at the Central Fire Station, Lawrence, Mass.

Long Branch, N. J., to Buy Apparatus—Long Branch, N. J., has voted to appropriate $13,000 for the purchase of fire apparatus.

Fire Station Being Erected in Leetonia, O.—A combination village building and fire hall is being erected in Leetonia, Ohio.

Pittsburgh, Pa., to Raze Fire House—Station 6, Pittsburgh, Pa., which was abandoned when a new fire and police station was completed, may be razed at an early date.

Morrill, Neb., Buys Apparatus—Fire apparatus, owned jointly by farmers and merchants, has been purchased at Morrill, Neb., for the protection of rural property.

Arcadia, Cal., to Erect Fire Station—The Council of Arcadia, Cal., voted to erect a building to house the Police and Fire Departments and the jail.

Harbor Beach, Mich., Has Fire Alarm—A new fire alarm system, consisting of nineteen boxes, has been installed at Harbor Beach, Mich.

Woonsocket, S. D., Has New Apparatus—Woonsocket, S. D., has purchased fire apparatus equipped with a booster tank.

Mitchell, Ore., to Organize Fire Department—The Commercial Club of Mitchell, Ore., is sponsoring the formation of a volunteer Fire Department.

National City, Cal., May Have New Houses—The Council of National City, Cal., is considering the addition of two new fire stations and a complete fire alarm system.

Everett, Wash., to Erect Fire House—Chief C. E. Swanson of Everett, Wash., is making plans for a fire station near the waterfront.

Chevy Chase, Md., to Erect Fire House—Bids have been received for the construction of a new fire station in Chevy Chase, Md.

Junior Department Organized at Mastic, N. Y.—A Junior Fire Department has been organized at Mastic, L. I., N. Y. Meetings of the boys will be held in the Fire Hall.

Longview, Wash., Firemen Want 2-Platoon System—Firemen of Longview, Wash., have petitioned for the establishment of the two-platoon system.

Boston Buys More Fire Apparatus—Contrary to the wishes of the Finance Commission, Boston, Mass., has purchased new fire apparatus.

Mechanicsburg, Pa., to Have New House—Work has started on a new fire station in Mechanicsburg, Pa., for the ladder company.

Navy Yard Has New Fire Alarm System—A new fire alarm system has been installed by government mechanics at the Mare Island Navy Yard, San Francisco, Cal.

Harrisburg, Pa., to Buy Apparatus—An ordinance has been approved in Harrisburg, Pa., appropriating $8,000 for the purchase of two combination chemical and hose wagons.

Beverly Hill, Cal., to Have Station—Plans are being made for a new $50,000 fire station to be erected in Beverly Hill, Cal., in the civic centre site.

Rock Island, Wash., May Build Station—The City Council of Rock Island, Wash., is considering the construction of a new fire station.

Fireman Burned in Apparatus Fire—Returning from a fire, apparatus of Conneaut, Ohio, on which volunteer firemen were riding, burst into flames. Only one fireman was burned but the apparatus was ruined.

Leonia, N. J., Firemen Against Central Station—Firemen of Leonia, N. J., are against a plan to erect a headquarters building and to house all the fire companies under one roof. No definite action has been taken.

Wilmington, N. C., to Open Station—Wilmington, N. C., will place a new fire station in service on September 1. The building is of stucco and constructed along Spanish mission lines.

Henderson, Ex-Chief of St. Louis, Dead—Frank E. Henderson, a former chief of the St. Louis Fire Department, died in St. Luke's Hospital, Kansas City, following an illness that lasted over a year.

Volunteers to Meet in Tarentum, Pa.—It is expected that a large number of volunteer firemen will assemble in Tarentum, Pa., to attend the thirty-eighth annual convention of the Western Pennsylvania Firemen's Association, August 10 to 15. The association parade will be held August 13.

Napa, Cal., Chief Celebrates Anniversary—Charles F. Otterson, Chief of Fire Department, Napa, Cal., has celebrated his twenty-fifth anniversary as head of the department. The day also marked the arrival of a 750-gallon pumper.

Wisconsin Chiefs to Meet in Portage—About two hundred Chiefs are expected to attend the annual convention of the Wisconsin Fire Chiefs' Association, which will be held in Portage, September 3 and 4. Business sessions will be held in the lodge hall of the Elks Club.

San Diego, Cal., to Standardize Couplings—San Diego, Cal., is working on a plan for the standardization of hose coupling threads to conform to that of the National standard. A bill has been signed by Governor James Rolph, Jr., of California giving municipalities of the state five years in which to make the change.

North California Firemen Have Anniversary—A dance, banquet and baseball game were some of the features arranged for the first anniversary meeting of the Northern California Firemen's Association that was held at Weaverville, Cal., June 28. Fire Marshal Jay W. Stevens spoke at the meeting.

New Box Numbering Started in Milwaukee—A new system of fire alarm box numbering has been put into effect in Milwaukee by Chief Peter Steinkellner. According to the new plan, the city is divided into two zones. A new automatic master transmitter has also been installed in the fire alarm headquarters.

Elmira, N. Y., Improves Fire Alarm—Tape registers are being installed in all fire stations in Elmira, N. Y., to replace the old style visual indicators. A map has been prepared showing the various fire alarm circuits, as well as a code book. Chief Espey has been ill at home suffering from two very painful carbuncles on his upper lip.

Three Houses Opened on Staten Island—Three new fire stations have been opened on Staten Island, part of New York City. They are located at Mariners Harbor, New Brighton and South Beach. Four other houses have been constructed on Staten Island during the past two years. Money is being sought to build another house for Hugeunot.

Paid Department Urged for Mt. Vernon—The National Board of Fire Underwriters has recommended that Mount Vernon, N. Y., have a full paid Fire Department. At the present time, this municipality which is the second largest in Westchester County, has a combination paid and volunteer organization. The City Council may act soon on the report which the Board has just issued.

Bowker Considered Dean of N. J. Chiefs—With the resignation of Chief Gerstung, of Elizabeth, N. J., it is believed that Chief Reginald H. Bowker, of Passaic, is now the dean of New Jersey Chiefs. Chief Bowker was volunteer chief for three years. Before being named paid chief he was head of construction for the Acquackanock Water Company, now owned by the Passaic Valley Water Commission.

Providence, R. I., Has Pup Fireboat—A pup fireboat, fourteen feet long, designed to assist in fighting fires under piers, has been placed in service in Providence, R. I. The boat is propelled by the reaction force generated from the discharge of water forced through a hose line by a pump on the boat. An outboard type motor operates the pump. The boat is constructed with an all-metal hull. The boat will be stored near the waterfront and will be carried to fires on a trailer.

PROPOSED IMPROVEMENTS

Crafton, Pa.—Dept. Internal Affairs approved bond issue for purchase of a fire truck, according to reports.

Port Arthur, Tex.—City plans voting August 15 on $285,000 bond issue, part of which is to be used for fire protection. J. F. Logan, Mayor.

Kelso, Wash. — Fire Department planning erection of new fire station. A. L. Crump, Chief.

Parkersburg, W. Va.—Plans and specifications for proposed three new fire stations are being completed.

East Orange, N. J.—Board of Fire Commrs. and finance committee of Council considering site for proposed new fire headquarters.

Pawtucket, R. I.—Reports state Cumberland Hill fire district to hold meeting to discuss purchase of new fire truck and erection of fire station.

Albany, Minn.—Reports state Fire Department planning purchase of new chemical truck. A. J. Loehlieh, Chief.

Trainer, Pa.—Reports state Fire Department raising funds for purchase of new apparatus.

CONVENTION DATES

July 22-23—CENTRAL NEW YORK FIREMEN'S ASSOCIATION. 38th Annual Convention, Endicott, N. Y. Secretary, T. J. Murray, Cortland, N. Y.

July 27-30—FIRE EXTENSION SCHOOL OF WEST VIRGINIA. 1st Annual School, West Virginia State University, Morgantown. Address, Prof. Lewis J. Carpenter, University of West Virginia, Morgantown.

July 30-Aug. 1—SOMERSET COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Windber, Pa. Secretary R. H. Harding.

July 31-Aug. 3—ONTARIO VOLUNTEER FIREMEN'S ASSOCIATION. Annual Convention, Dundas, Ont., Can. Secretary, W. J. Armstrong, 282 Indian Grove Ave., Toronto, 9 Ont.

Aug. 3-6—COLORADO STATE FIREMEN'S ASSOCIATION. 15th Annual Convention, Tournament and Fire College, Grand Junction, Col. Secretary, Clinton Turnbull, 303 Jacobson Bldg., Denver, Col.

Aug. 4-6—WISCONSIN PAID FIREMEN'S ASSOCIATION. 24th Annual Convention, Oconto, Wis. Secretary-Treasurer, William Schultz, Sheboygan, Wis.

Aug. 4-7—DOMINION ASSOCIATION OF FIRE CHIEFS. 23rd Annual Convention, Shawinigan Falls, P. Q., Can. Secretary, Chief James Armstrong, Kingston, Ont., Can. Exhibits, Chief R. N. O. Harrington, 4000 Marlowe Ave., Notre Dame de Grace, Montreal.

Aug. 5-7—CALIFORNIA STATE FIREMEN'S ASSOCIATION. 9th Annual Convention, Santa Rosa, Cal. Secretary-Treasurer, H. E. Strasser, 1171 Tenth St., San Diego, Cal. Chairman, Convention Committee, Chief William H. Muenter, Santa Rosa, Cal.

Aug. 9-12—NEW YORK STATE PERMANENT FIREMEN'S ASSOCIATION. 13th Annual Convention, Jamestown Hotel, Jamestown, N. Y. Secretary, P. F. Phillips, Morton Club, Jamestown, N. Y.

Aug. 10-12—UTAH STATE FIREMEN'S ASSOCIATION. Annual Convention and Tournament, Spanish Fork, Utah. Secretary, Harris E. Anderson, Salt Lake City, Utah.

Aug. 10-15—WESTERN PENNSYLVANIA FIREMEN'S ASSOCIATION. 38th Annual Convention, Tarentum, Pa.

Aug. 11-13—INDIANA FIREMEN'S ASSOCIATION. 14th Annual Convention. Evansville, Ind. Secretary, Clem Smith, P. O. Box 520, Terre Haute, Ind.

Aug. 12-14—VIRGINIA STATE FIREMEN'S ASSOCIATION. 44th Annual Convention, Winchester, Va. Secretary, E. K. Landis, Pulaski, Va.

Aug. 12-14—CUMBERLAND VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. 31st Annual Convention, Winchester, Va. Secretary, C. L. Jacobs, Waynesboro, Pa.

Aug. 18-21—FIREMEN'S ASSOCIATION OF THE STATE OF NEW YORK. 59th Annual Convention, Troy, N. Y. Secretary, Fred A. Davis, Fort Edward, N. Y.

Aug. 21-22—CONNECTICUT STATE FIREMEN'S ASSOCIATION. 48th Annual Convention, Cameo Theatre, Campbell Ave., West Haven, Conn. Secretary, D. W. Harford, 10 Chestnut Street, So. Norwalk, Conn.

Aug. 24-27—NORTH CAROLINA STATE FIREMEN'S ASSOCIATION. 44th Annual Convention and Tourament, Statesville, N. C. Secretary, John L. Miller, Concord, N. C.

Sept. 1-3—KENTUCKY FIREMEN'S ASSOCIATION. 12th Annual Convention, Louisville, Ky. Secretary, Captain S. G. Render, Fire Department, Louisville, Ky.

Sept. 3-4—WISCONSIN STATE FIRE CHIEFS' ASSOCIATION. 2nd Annual Convention, Portage, Wis. Secretary, Chief A. J. Rahn, Two Rivers, Wis.

Sept. 7—NATIONAL FIREMEN'S PARADE. 9th Annual Parade, Labor Day, Washington, D. C. Address, Sergt. A. J. Bargagni, Marshal, D. C. Fire Dept. Training School, Washington, D. C.

Sept. 8-10—ILLINOIS FIREMEN'S ASSOCIATION. 44th Annual Convention, Murphysboro, Ill. Secretary, Assistant Chief Roy W. Alsip, Champaign, Ill. Exhibit information, Chief Albert Herring, Murphysboro. Also, 1st Annual Convention, Ladies' Auxiliary of Illinois Firemen's Association. Secretary, Mrs. R. W. Alsip, Champaign.

Sept. 14-16—ARKANSAS STATE FIREMEN'S ASSOCIATION. 10th Annual Convention and 2nd Annual Drill School, Marion Hotel, Little Rock, Ark. Secretary, H. D. Compton, Central Fire Station, Little Rock.

Sept. 15-16—IOWA FIREMEN'S ASSOCIATION and IOWA FIREMEN'S FUNERAL AID ASSOCIATION. 54th Annual Convention, Audubon, Ia. Secretary, Paul A. Soener, Independence, Ia.

Sept. 18-19—NEW JERSEY STATE FIREMEN'S ASSOCIATION. 54th Annual Convention, Atlantic City, N. J. Secretary, William Exall, Room 602, Chamber of Commerce Building, Newark, N. J.

Sept. 21-23—TENNESSEE FIREMEN'S ASSOCIATION. 1st Annual Convention, Nashville, Tenn. Secretary-Treasurer, Joe J. Martin, Nashville, Tenn.

Sept. 21-25—NORTHWEST FIRE SCHOOL. 4th Fire School. University of Minnesota, Minneapolis, Minn. Address, Director of School, Room 16, University Library, Minneapolis.

Sept. 22-24—MASSACHUSETTS STATE FIREMEN'S ASSOCIATION. 52nd Annual Convention, Lynn, Mass. (Sessions at New Ocean House, Swampscott.) Secretary, Daniel J. Looney, Room 1043, Old South Bldg., Boston, Mass.

Oct. 6-8—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. 52nd Annual Convention, Wilkes-Barre, Pa. Secretary, Charles E. Clark, 411 Bellevue Ave., Wayne, Pa.

Oct. 14-17—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 59th Annual Convention, Plaza Hotel, Havana, Cuba. Meeting Hall, Asturiano Club. Recording Secretary, Chief James J. Mulcahey, Yonkers, N. Y.; Executive Secretary, Jay W. Stevens, 1014 Merchants' Exchange Bldg., San Francisco, Cal.; Chairman, Exhibit Committee, Chief Chrales A. McGinley, East Orange, N. J.

Oct. 15—MISSOURI VALLEY ASSOCIATION OF FIRE CHIEFS. Annual Convention, Havana, Cuba, at same time as I. A. F. C. Secretary, Chief Ray Tiller, Waterloo, Ia.

Oct. 20-22—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. 50th Annual Convention, Norfolk, Neb. Secretary-Treasurer, H. A. Webbert, Kearney, Neb.

Oct. 20-22—RAILWAY FIRE PROTECTION ASSOCIATION. 18th Annual Meeting, Cleveland, Ohio. Secretary-Treasurer, R. R. Hackett, Baltimore & Ohio Railroad, Baltimore, Md.

May 11, 1932—DEL-MAR-VA VOLUNTEER FIREMEN'S ASSOCIATION. 3rd Annual Convention, Cape Charles, Va. Secretary, W. A. Karpa, Cape Charles, Va.

June, 1932—NORTHWESTERN OHIO VOLUNTEER FIREMEN'S ASSOCIATION, 60th Annual Convention, Gibsonburg, Ohio, (exact date to be decided later.) Secretary, Harry Smith, Supt., Water Works, Port Clinton, Ohio.

June 21-24, 1932—ILLINOIS FIRE COLLEGE. 8th Annual College, University of Illinois, Champaign-Urbana, Ill. Director, Prof. L. H. Provine. Secretary, Asst. Chief Roy W. Alsip, Fire Department, Champaign, Ill.

N. Y. Sets Time for Chief's Examination

According to the latest information obtained at the offices of the Municipal Civil Service Commission, New York City, the examination for Chief of the New York Fire Department will be held in September. This will avoid any conflicts with vacation schedules.

West Virginia to Hold Short School

The first annual Fire Service Extension School of West Virginia will be held at Morgantown, W. Va., July 27-30 under the auspices of West Virginia University, School of Mines, and the Department of Industrial Extension. Prof. Lewis V. Carpenter of West Virginia University is Director and Secretary of the school.

Lectures will be given by C. O. Stahlmann, State Fire Marshal; Harry K. Rogers, Western Actuarial Bureau, Chicago; Plummer Pride, Safety Director, National Fuel Coal Co., and George Riggs of the Mine Safety Appliances Company, Pittsburgh; William A. Rathbun, National Board of Fire Underwriters; W. W. Hodge, Professor of Chemical Engineering; Samuel Morris, Professor of Chemistry; A. A. Hall, Professor of Electrical Engineering; E. V. King, State Superintendent, West Virginia Inspection Bureau; Carlisle A. Raper, Assistant Fire Marshal; Chief Martin Quinn, Martinsburg, W. Va.; Nelson Bauer, Pyrene Manufacturing Company, Newark, N. J.; demonstrations by C. W. Hutchinson, of Huntington, W. Va., and W. J. Williams, of the West Virginia Inspection Bureau.

Ambulance Presented to Cambridge

Through the generosity of Walter P. Chrysler, of Chrysler Motors, Inc., a Dodge ambulance, completely equipped was presented to the Cambridge, Md., Fire Department. Mr. Chrysler has a home near Cambridge and spends much of his time there during the duck season. J. EMORY PARKS

Washington, D. C., Plans Parade

The ninth annual National Firemen's Parade will be held in Washington, D. C., on Labor Day, September 7. A large number of prizes are to be awarded for participation in the parade and it is expected that the march will be reviewed by governors of a number of the Eastern States. Sergt. A. J. Bargagni, of Fire Department Training School, Washington, D. C., will have charge of details in connection with the parade.

Ladder Delivered to Falmouth, Mass.—A new ladder truck has been placed in service in Falmouth, Mass.

Eastern Section, R. F. P. A., Meets—The nineteenth meeting of the Eastern Section of the Railway Fire Protection Association was held in the meeting room of the American Railway Association in New York City on June 15. Chairman Hickey, of the R. F. P. A. presided. While the attendance was not as large as usual, there was much interest and participation of the members present.

BURRELL ALL-SERVICE GAS MASK

Most Widely Used Gas Mask in the World
For Safe and Efficient Fire Fighting

OFFICIALLY APPROVED BY THE UNITED STATES GOVERNMENT

PROTECTION ASSURED

The BURRELL ALL-SERVICE GAS MASK is the only canister type mask Officially Approved by the United States Government for protection against Carbon Monoxide, Ammonia, Smoke and All Other Poisonous Industrial Gases and Fumes in accordance with Bureau of Mines Approval Specifications.

The importance of Complete Protection today for Safe and Efficient Fire Fighting can not be overestimated because Fire Departments are now called upon to combat hazardous conditions that did not exist a decade ago. When your men are equipped with BURRELL ALL-SERVICE GAS MASKS, they can enter dense smoke and poisonous gases quickly, find the seat of the fire, ventilate and attack it.

The superiority of the BURRELL ALL-SERVICE GAS MASK and its wide adoption as a necessary and efficient fire fighting tool is emphasized by the fact that some municipal fire departments have as many as 100 to 125 of these masks in service.

We should like to have the members of your department become familiar with the value and use of this fire fighting and rescue equipment. Just fill in the coupon below and we will arrange for a demonstration—without obligation.

Mine Safety Appliances Co.

Braddock, Thomas and Meade, Pittsburgh, Pa.

"EVERYTHING FOR MINE AND INDUSTRIAL SAFETY"

MINE SAFETY APPLIANCES CO.
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Please arrange, without obligation, to demonstrate the BURRELL ALL-SERVICE GAS MASK to our department.

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Durable, Heat Treated, All Metal

FIRE BROOM

You've Never Used Anything Like It

DIGS UP DIRT AS IT SWEEPS!

Here is a Fire Broom that firemen everywhere have been waiting for. Entirely constructed of special heat treated steel, its strong spring steel bristles will not curl when exposed to heat and flame. Anyone can use it effectively for preventing spread of grass or brush fires. Specify FELCO Brooms on all new apparatus, they are an absolute necessity. Cost is low.

If your supply house does not carry them, write us direct.

FELCO, *Incorporated*

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National Intermediate Ejector

The most essential accessory to modern fire apparatus—National Foam Equipment.

NATIONAL FOAM SYSTEM, Inc.

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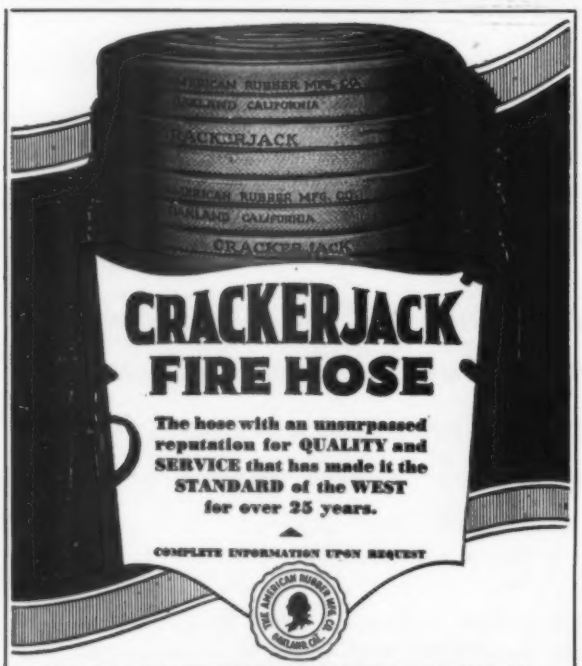

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The most effective and economical way of making your wants known is through a small classified advertisement in FIRE ENGINEERING, the magazine everybody in the fire field reads. The "Position Wanted" rate is only $2 per inch (single column).

FIRE ENGINEERING

24 West 40th Street New York City

The Round Table

(Continued from page 540)

masks and in addition the truck company is equipped with hose masks.

Our experience with this type of equipment has been very satisfactory, and would not be without them. All men in our department are trained to use gas masks.

* * *

ANSWERS TO PREVIOUS QUESTIONS

The following is in answer to a problem on whether the enforcement of fire prevention measures falls within the jurisdiction of the Fire Department:

Henry J. Hyatt, Chief, Fitchburg, Mass.: Outside of building construction fire prevention comes under the Fire Department. All building construction comes under the jurisdiction of the Superintendent of Buildings, the superintendent, however, often consults me before deciding on some special cases.

* * *

The following is in response to a question on how to remove 2½-inch hose from fire apparatus:

George E. Thomes, Chief, Alexander Hose Co. No. 1, Mohawk, N. Y.: We have a 1,000-gallon Ahrens-Fox pumper with partition in the center. One line has nozzle attached so that if we get to the fire first we lay that line or if we get to the hydrant first we lay the other first. We also have a rebuilt Packard combination chemical and hose with 800 ft. of 2½-inch hose laid the same way. We do not lay hose unless it is necessary as we are all volunteers and in this way save a lot of work for those that show up at the fires. We also have an American-LaFrance City Service truck, carrying 230 ft. of ladders.

* * *

The following replies are part of a discussion on whether the fire officials have tried to establish a Junior Fire Department and what has been their experience:

Ross E. Ressler, Chief, Bellevue, Pittsburgh, Pa.: We are located eleven miles from Pittsburgh, in a township in which there is no piped water, and are situated on a ridge so that we do not have running streams of water available.

Our wells are from 85 to 200 ft. deep and are inadequate for fire protection. Scattered cisterns constitute almost the entire quickly available water supply. From the foregoing it is seen that chemical tanks or booster equipped trucks are about as efficient as any other equipment. Therefore, it becomes doubly advantageous to avoid fires, and in line with this we enlist the school boys into a Junior League.

These boys were given instructions as to the so-called "breeding places," in regard to oily rags, oily mops, papers, etc., being kept in the cellar and closets, and in order to arouse enthusiasm, were given a personally conducted tour of the fire truck. Everything on the truck was explained to them—chemical tanks, Babcocks, asbestos gloves, rubber gloves, smoke masks, and first aid kits, also a Babcock was discharged in order that they would see just exactly how it was done.

These boys were instructed to write a letter to me, telling something definite they had done to prevent fires and each letter writer was given a badge of the following description:

A white celluloid button 1¼-inch in diameter, with a pin on the back, printed in red on the face. The top half of the circle read "Highland Firemen's Association," the bottom half "Junior League," while across the center are the words "Prevent Fires." Suspended from the bottom by a narrow red, white and blue ribbon is a red helmet 1¼-inch x ⅞-inch. We believe this design to be suitable, and the badge is inexpensive. We expect to secure good results from the friendship of the boys.

During the next Fire Prevention week, we intend to put out printed matter covering a large number of points in fire prevention and what to do, and will use the Junior League to distribute a portion of the printed material.

H. W. Breder, Chief, Egg Harbor, N. J.: Three years ago I organized a Junior Fire Department selecting the boys from our Boys Scout Troop No. 2. These boys average in age from 14 to 17 years and had the training of obeying orders and were familiar with discipline which I found was a big help in forming an efficient Junior Department. These boys also had first aid training and today have advanced to such efficiency in this work that many were presented with diplomas by the New Jersey Electric Light School of first aid work. The Junior Department which consists of twenty boys, has its own apparatus equipped with two 35-gallon chemical tanks. They also carry on this apparatus four sections of 2½-inch and four sections of 1½-inch hose, 2 shut-off nozzles, all sizes of nozzle tips, 200 feet of rope, gas-masks, first aid kit, 6,000 candle power search-light, lanterns, four 2½-gallon extinguishers, one 5-gallon Indian Hand Pump extinguisher, 20-foot ladder, axes, shovels, pitchforks, salvage covers and all kinds of siamese, double male and double female connections. On arriving at a fire these boys get the Chemical tanks to work and rope off the street adjacent to the fire. They do other scout work such as supplying the regular men with whatever equipment they required. They are only boys by name, but men in action and a big help to the department. These boys also make up our Firemen's Band and are just as efficient in this line as in their other work, they are furnished with firemen band suits and firemen badges

I am personally very proud of these boys and I am sure they are going to make good fire fighters when they become of age.

We do not encourage children to visit the fire station for we believe this would become somewhat of a nuisance. We, however, go to the schools and give them fire prevention talks and fire drills, during Fire Prevention week. The children write fire essays for which they receive cash prizes. The Mayor and Fire Commissioners accompany us to the schools during that week.

Wisconsin Firemen to Meet in Oconto—The twenty-fourth annual convention of the Wisconsin Paid Firemen's Association will be held in Oconto, Wis., August 4-6. William H. Schultz, of Sheboygan, is Secretary.

Morse Nozzle for Use on New York City Fireboat

A Morse Invincible 3,000-gallon nozzle that is to be used on the new fireboat being built for New York City, was exhibited at the convention of the New England Association of Fire Chiefs held in Boston recently. This nozzle forms part of an order for three 3,000-gallon capacity Invincible nozzles and five 2,000-gallon capacity Invincible nozzles of the new four, two-wheel type. The larger nozzles will have assorted tips from 1½ to 3-inch and the others from 1½ to 2½-inch outlets. The order was placed with the Woodhouse Manufacturing Co., Inc., together with other equipment for the New York City fireboat. In the center of the group is D. A. Woodhouse, President of the company, and at the right, Chief George Johnson, of Waltham, Mass.

FALSE ALARMS

HAPPINESS

At the sewing circle meeting one woman in particular appeared so happy that she stood out from the others.

"You look so happy this morning, Mrs. Murphy. Have you had good news?"

"Yes I had. My husband is home suffering from smoke and he thought it was stomach trouble and the doctor said it was a nervous breakdown. So now we're going to California."

It was embarrasing as h—— when we took Dora to the ball game and bought her a bag of peanuts. She started to throw them to the reporters in the press-box cage.

NOT WANTED

Hotel accommodations were rather limited in the village selected as the place where the Short Course was to be held. All those who registered early were given good rooms in private homes. The late arrivals had to be satisfied with the local hotel. This is a story concerning one of the late arrivals. In the middle of the night he reached for the telephone.

"Hello, night clerk!" he shouted.

"What's on your mind, now?" asked the clerk.

"Mind, nothing! They're all over the bed."

CONFLAGRATION

"That was some fire they had in the libary," one student remarked to another at the breakfast table.

"Oh yeah!"

"Yeah. The smoke poured out in volumes."

Our numerous labor-saving devices seem to have enabled us to save more labor than we know what to do with.

MUCH APPRECIATED

"There'll be a good many men around here who will miss the fire station when it closes up next week because of the Commissioner's order."

"That's surprising. I thought that you were very much against having the station on this street."

"Sure I was, but they've got the best set of garden tools in the neighborhood."

When Greek meets Greek one tries to collect and the other makes excuses.

HUNG ON A STRING

The boys at the engine house were watching the progress of a party across the street. There seemed to be considerable excitement for a while. Next day the driver asked one of the guests:

"What was all the excitement at Jim's place last night?"

"Oh, a girl was playing her violin in her pajamas and she broke a string."

"What—on her violin?" asked the driver.

"No. On her pajamas."

SURE METHOD

A ladderman had his photograph taken and when the proofs came he showed them to his wife.

"Oh look, you have only one button on your coat," she exclaimed.

"Thank heaven," he replied. "You've noticed it at last. That's why I had the photo taken."

Then there was the schoolboy who in preparing a composition on Queen Elizabeth wrote: "Elizabeth was a queen and a virgin. As a queen she was a great success."

MODERN STYLE

As it was a warm afternoon, a few of the firemen hovered near the open door of the station and watched the workers on their way home from the various offices. As firemen delight in doing, they were free in making comments on the ones who went by.

"That's what I call a modest girl," said one. "Notice how far down the hem of her dress is; almost to her ankles."

"Don't be silly, old fellow," was the answer. "Something has slipped."

SATISFACTORY

A new Irish policeman was standing on the corner waiting for something to happen so that he could show how much he knew. He did not have long to wait. A fire engine came speeding down the street, and before the traffic signal was given, a motorist from a side street tried to cut in. The new officer motioned the driver to the curb.

"Have you got a driver's license?" he asked.

"Sure. Would you like to see it?" politely questioned the driver.

The officer answered, "Why should I want to see it if ye've got it. Sure an it's if ye haven't got it that I want to see it."

Drawing by "Art" Espey

Wisecracking Ladderman: "Are You Hungry? Take a Couple of Chops!"

STERLING SIRENS

A Siren for Every Purpose

Chief Cars
Fire Trucks
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"SUPREME SINCE 1902"

The World's Oldest and Largest Exclusive Manufacturers of Sirens

The Sterling Siren Fire Alarm Co., Inc.
61 Allen St.
ROCHESTER, N. Y.

Reduce WATER DAMAGE & INSURANCE RATES with

Shuredry SALVAGE COVERS

"Back in May of last year, after having heard so much about salvage work by the fire department, and after having given considerable thought to the fact that three times as much damage is done at fires by water as by flames, I decided to introduce salvage work in my department, and immediately purchased several of your No. 2 SHUREDRY GREEN-BAK salvage covers, size 12' x 18'

"Since that time, we have saved from water damage thousands of dollars worth of valuable merchandise and household effects for the citizens of Johnson City, and I am so thoroughly sold on salvage work today, and on your SHURE-DRY salvage covers, that I would not sell the covers now for $100.00 apiece if I could not buy more to replace them. What I want to do is to add more covers and save more goods from water damage, because this will enable me to make a better showing at the end of the year by reducing my annual fire-loss report.

"I cannot too strongly recommend salvage work and SHURE-DRY salvage covers to the other fire chiefs of this country."

Chief, Johnson City, Tenn., Fire Dept.

75% of the nation's annual half-billion-dollar fire loss is traceable to Water Damage. Send for Shuredry samples today.

Fulton Bag & Cotton Mills
Manufacturers Since 1870
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Front Mounting Effects a Marked Economy

THE Barton Centrifugal Fire Pump mounts on the front of the truck as shown above, and is driven directly from the motor crankshaft by means of a patented power take-off. It would be difficult to imagine a more simple, more economical method of mounting and drive.

Thus a Barton can be used with any make of standard truck—no costly alterations necessary—no expensive transmission of special design required. Thus a Barton can be installed in decidedly less time—another important economy.

This front mounting, offered only on Barton Pumps, will save you many dollars in first cost. Furthermore, it is more dependable, makes it easier to connect hose lines, and gives complete accessibility to the entire pump.

Both the 300-gallon and 500-gallon Barton Pumps have passed the 12-Hour Underwriters' Tests. Both have the ability to pump dirty water from a lake, stream, cistern or muddy slough equally as well as from a city hydrant.

SEND for FREE BULLETIN

The many operating advantages and money saving features of the Barton will certainly appeal to your good judgment. By all means investigate! Barton Fire Pumps are handled by the leading apparatus people. Consult any one of them, or write us for Illustrated Bulletin 60. AMERICAN STEAM PUMP COMPANY, Battle Creek, Mich.

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FIRE PUMPS

MAXIM FIRE APPARATUS

All Types

All Sizes

If you are thinking of buying new apparatus shortly, be sure to get all the facts about MAXIM before you decide.

Send for complete information

MAXIM MOTOR COMPANY, Middleboro, Mass.

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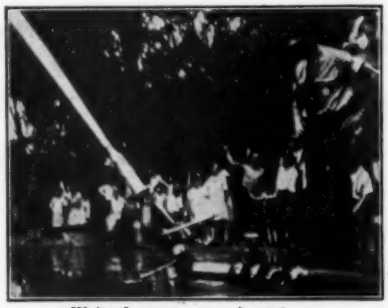
is a portable turret pipe that can be used on the ground or mounted on the apparatus. This photo shows our three-way gun used on the ground, connected to two lines of hose. This gun may be furnished with either two-way, three-way or four-way Siamese, as desired.



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FIRE BOAT EQUIPMENT

Invincible and Callahan Nozzles

Fire Department Supplies

are in use throughout the country and giving unsurpassed service.

Every fire official should be fully acquainted with Morse equipment and have our catalog and other descriptive literature on file for ready reference whenever considering the purchase of new equipment.

You will find that it pays.

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in Service Wherever Fires Are Fought

Our general line of equipment includes every fire department supply of merit.

Larkin shut off nozzles alone are in service in over 5,000 fire departments in U. S. and Canada.

Give us an opportunity of quoting on your next requirements. Let us send you our general catalog.

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Builders of equipment to meet your requirements. Specializing in Apparatus for Rural Fire Fighting.

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New Victor Gas and Fume Mask

Better Rubber. Longer Life. Better Fitted. Moulded to Fit the Face. Better Vision. Renewable Lenses. Better Air. Better Work. Low Prices. High Quality.

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Full Line Fire Dept. Supplies and Equipment

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We will then request the leading manufacturers of such equipment to send you descriptive literature and prices direct without any cost to you or obligation whatever.

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Complete information and Prices on request.

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Why ruin your hose by driving over it? Or waste valuable time cutting off and disconnecting?

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Hedberg Super Sirens
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offer the world's greatest and most versatile range of choice involving sizes and methods of operation.

Write for descriptive matter showing sirens that have never lost in competition.

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Wound with a woven-in strand which runs back and forth from rubber lining to outer surface. This yields a pliability which prevents all buckling at the folds. Write for details.

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Territories Available

Comfort and Protection With
CAIRNS CUSHION LINED HELMETS

Comfortable as your old felt hat.
Won't shake off.
Never go to a fire without the protection of a good helmet.

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G

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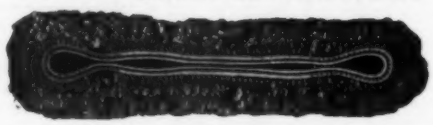
Bi-Lateral Fire Hose



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Lined with three rubber tubes, specifically guaranteed for six years.

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15 Park Row, New York, N. Y.
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A. H. NICKELS, M.D.
R. W. KIRCHNER, M.D.
CHICAGO

April 23rd, 1931.

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I had a very unusual opportunity, while administering medical aid to the unfortunate victims of this disaster, to witness the smooth and rhythmical operation of this machine. The fact that it automatically breathes for the victim and also automatically adjusts itself to the capacity of the individual patient's lungs is a noteworthy accomplishment.

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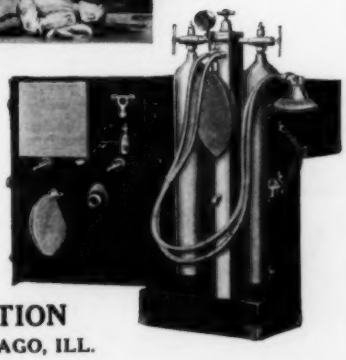
Very truly yours,
A. N. NICKELS, M.D.



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Send for list of progressive fire departments already equipped with E & J machines.

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